THE

Therapeutic Gazette.

WHOLE SERIES, VOL. XX. DETROIT, MICH., SEPTEMBER 15, 1896. THIRD SERIES, VOL. XII. NO. 9.

CONTENTS.

Original Communications.

Some Thoughts concerning Disease and Recovery, in Their Relation to Therapeutics. By Solomon Solis Cohen, M.D. 577
Sacculated Innominate Aneurism Treated by the Introduction of Gold Wire and Galvanism. By E. P. Hershey, C.E., M.D. 590
Vegetable Dyspepsia. By W. A. Walker, M.D. 593
Respiratory Exercises in the Treatment of Disease. By Harry Campbell, M.D. Lond., F R.C.P. Lond.. 594
Uranium Nitrate in Diabetes Mellitus. By Samuel West, M.D., F.R.C.P. 596
The Pathology of Itching, and Its Treatment by Large Doses of Calcium Chloride. By Thomas D. Savill, M.D. Lond. 597

Leading Articles.

On the Value of Peptonized Food ... 600
The Treatment of Aortic Aneurism by Electrolysis 601
Has the Injection of Air been Responsible for Deaths following the Use of Antitoxic Serum? 602
The Value of Experiments upon Animals to Modern Medicine 603
The Objects and Limits of Operation for Cancer 604

Reports on Therapeutic Progress.

The Treatment of Phlebitis 599
Sarcoma of the Kidney 599
The Statistics of Anesthesia 609
The Treatment of Typhoid Fever with Typhoid Thymus Extract 610
Artificial Feeding by the Nose in Infants 610
Pruritus of the Genitals 611
Adherent Placenta 612
The Use of Chlorate of Sodium in Cases Manifesting Intolerance to Iodide of Potassium 613
The Vaginal Douche before Labor .. 613
The Treatment of Boils and Anthrax by Means of Methylene Blue 615
The Treatment of Chronic Suppuration of the Middle Ear 615
The Treatment of Joint-Tuberculosis by Injections of Iodoform 616
Powder for Hay Fever 617
Quinine, Salicylic Acid, Antipyrin, Acetanilid, Phenacetin, Thallin, and Alcohol, as Antipyretics 617
A Prescription for Whooping-cough. 618
Alcohol in the Treatment of Acne Rosacea 618
The Use of Sulphate of Duboisine in Paralysis Agitans 620
The Question of Dose in the Treatment of Certain Forms of Nervous Disorder 620
Eczema of the Flexures, and Its Treatment 621
The Use of Ichthyol in Intestinal Disorders 621
The Treatment of Acute Dysentery. 622
Iritis 622
The Treatment of Infectious Endocarditis 624
Cæsarean Section: Suture of the Uterus versus Total Extirpation .. 625
The Treatment of Vulvo-Vaginitis in Children 627
The Surgical Treatment of Round Ulcer of the Stomach 628
Observations on Splenectomy 629
Dr. Gibney's Method of Treating Sprained Ankle, with Report of Seven Cases 632
A Critical Résumé of Recent Progress in Cerebral Surgery 634
Sterilization of Catgut by a Modified Cumol Method 636
Calcium Sulphydrate, a Safe, Efficient, and Economical Depilatory. 637
Resection of the Bladder 637

Correspondence.

London Letter 638
Annual Meeting of the British Medical Association, July 27-31, 1896.... 643
Paris Letter 647

Original Communications.

*SOME THOUGHTS CONCERNING DISEASE AND RECOVERY, IN THEIR RELATION TO THERAPEUTICS.**

BY SOLOMON SOLIS COHEN, M.D.,
Professor of Clinical Medicine and Therapeutics in the Philadelphia Polyclinic; Lecturer on Clinical Medicine in Jefferson Medical College; Physician to the Philadelphia and Rush Hospitals, etc.

MR. PRESIDENT AND MEMBERS OF THE MEDICAL AND CHIRURGICAL FACULTY: I thank you for your kind reception and for the honor which you have done me in asking me to address you upon this occasion. The comparatively brief period which has elapsed since I received your kind invitation has been unfortunately much encroached upon by college work, and especially the exhausting tedium of examinations, so that I have been compelled to set down hurriedly the thoughts I have wished to lay before you, and have lacked time to trim away redundancies and repetitions, supply omissions, or endeavor to impart rhetorical polish. Thus, from lack of opportunity to condense, that which was intended as an exordium has grown into a discourse, and I shall have to content myself with but a fragmentary presentation of the important practical applications of the prin-

*The Annual Oration delivered before the Medical and Chirurgical Faculty of Maryland, at their ninety-eighth annual meeting, April 30, 1896.

ciples sought to be explicated. Some of the difficulties experienced in finding words and phrases that should embody in a definite and intelligible form the views I desire to submit for your consideration, are due to my own inadequacy; but at least a part of the defects and imperfections of the address may, I trust, be generously attributed to the fact that the present state of knowledge in medicine and collateral sciences does not furnish us with exact and definite words and phrases for the fundamental factors of many of the most important pathologic and therapeutic processes; or in other words, while in certain trains of observation and induction the first and last terms have been established with a reasonable degree of certainty, intermediate terms are still in doubt and obscurity.

A great authority has defined medicine as "a science that aims at the preservation of health, the cure of diseases, and the physical perfection of man." Exception may well be taken to the use here made of the word "cure;" but we shall all agree, I doubt not, that in the description of the aims of our science, the preservation of health—which is as much more than the prevention of disease as a positive aim is always more than a merely negative one—rightly occupies the first place. I have never admitted the correctness of that classification or nomenclature which separates prophylaxis from therapeusis, hygiene from treatment. If, therefore, in treating of some of the relations of the therapeutic art with the fundamental sciences medical and general, and especially with the science of biology, I shall speak little of the preventive and preservative measures which are so distinctly the highest achievements of our science and art, in ancient or in modern times, it is because the principles of prophylaxis and of hygiene are so well recognized that it is unnecessary to dilate upon them; while that for which I shall plead is the formal recognition of like principles and their extension into the study and into the practice of that branch of our science and art to which the name of therapeutics is commonly but erroneously restricted—the management of the sick.

This phrase, the management of the sick, or, as Bigelow puts it, "the safe conduct of the sick," embodies an idea worthy of some elaboration in our present discussion. The ordinary definition of therapeutics as the "healing art" or the "art of treating disease" implies not only the error already reprobated (that the preservation of health is foreign to its scope), but still further restricts, and in restricting misdescribes, the therapeutic aim and method. If healing were always, or under well defined conditions, the work of art, and not, as we well know, the work of nature, we might speak of an art of healing; or if disease were an entity, a something existing independently of the powers and operations of the organism in which it is manifested, we might speak of "the treatment of disease." On the other hand, if nature's unaided efforts were always competent to effect recovery, there would be no need of any art or science of therapeutics apart from prophylaxis; and pathology might be studied as Faraday and our own Joseph Henry studied natural philosophy, simply for the enlargement of knowledge, without any thought of direct practical application. It is often necessary, however, for art to come to nature's aid, and to endeavor so to manage the organism, the subject of disease—in other words the sick person—that recovery may be surely and completely effected; and this requires of pathology that it shall discover the processes and results of disease and the processes and results of natural recovery, in order that art may be intelligently guided. But the intelligent guidance of art implies yet more than knowledge; it implies the analysis of observed facts and their reduction to definite and simple principles, which shall be applicable when mere experience fails, and which shall serve as a guide to unceasing progress. Recognizing thoroughly the imperfections of our knowledge, and the limitations of our art, it may nevertheless be asserted that the practice of medicine, notwithstanding the apparent complexity of the problems at times presented to it, is susceptible of being so reduced to definite and simple principles; or perhaps it would be still better to say that it has been in great degree reduced to such principles, that these principles have in the main been taught by all the great leaders of medical thought throughout medical history, and that their amplification or correction in accordance with modern progress, their coördination with the mass of contemporary knowledge, has been partially effected; the results waiting only for formal recognition, promulgation, and acceptance. Such formulation is beyond the ambition of this address; but I shall try to indicate some of the lines upon which it may be worked out.

In so far as I may judge from personal errors, and from observation of the errors of others, I should say that faults committed

in the management of the sick arise as much from lack of theory as from lack of experience or knowledge; or, to state the proposition still more strongly, that a physician thoroughly grounded in pathology, thoroughly skilled in diagnosis, thoroughly conversant with the power of the materia medica, yet lacking a sound therapeutic theory, might fail in the management of a case of disease, less from the imperfection of science than from the want of a sure method of availing himself of even the imperfect knowledge of the day. To secure the best clinical results from modern laboratory investigations, medical theory as well as medical practice—in other words the coördinating principles formerly embodied in the lectures upon "The Institutes of Medicine"—must again be taught in our medical schools.

In thus pleading for the recognition of the usefulness, nay the necessity, of therapeutic theory, if we are to progress in the practice of medicine beyond diagnosis, I am not unmindful of the history of the past; rather do I find therein—together with warnings against the construction of hypotheses from insufficient evidence, and against the erection of plausible theories into rigid systems—incentives to the construction of hypotheses and theories that may serve, as it were, for lenses to concentrate and focus upon individual problems the entire light of contemporary knowledge, and proofs of the enduring usefulness of theories reasoned from facts of observation, properly limited and judiciously applied.

The lines of induction from facts of observation to principles of therapeutic theory must come from several sources—from medical history, from clinical experience, from laboratory research in all the special medical sciences, and also from the facts and generalizations of biology. Indeed, I believe the most important work toward which medical teachers and thinkers at the present day can turn their attention, to be the coördination of medical science with the study of life and life-processes in general, in the light of the great advances made during the nineteenth century.

In such studies, prominence must be given not only to the ontogeny, but to the phylogeny, of man. Phylogeny, too, must be understood in its widest sense; for in order to fully comprehend those susceptibilities to disturbance and powers of recovery which form the chief data of the science of medicine, we must know the internal endowments and tendencies and the external circumstances, through the action and reaction of which man has reached his present state, and in how far the same intrinsic and extrinsic agencies are now operative or what modifications they have undergone. This involves, moreover, a study of the fundamental factors concerned in the origin and development of living beings in general; which, like the basic facts of all other sciences, must be sought first in their most simple manifestations—an order which the exigencies of medical practice have hitherto compelled us to reverse, thus greatly increasing the difficulties of the student.

Fifty years ago an attempt to base pathologic and therapeutic doctrines upon the data of biology would have been premature, because the great theory of evolution and the investigations into the development of organic beings, stimulated by that theory, were immature and in the controversial stage. And even twenty years ago it would have been unwise, for the reason that the errors and crudities necessarily pertaining to controversial periods, the first struggles of a great truth and the infancy of a new philosophy, were held with dogmatic insistence by the new converts and untrained disciples of Darwin, Spencer, and Haeckel. But now, not only has the evolutionary doctrine been measurably freed from error, and the main truths thereof firmly established, but on the other hand, what is no less important—for biology, like all other sciences, takes color from the prevailing philosophy—the world of thought has escaped from that abject slavery to Spencer which followed its defeat in the struggle against Darwin. So, too, the correction and improvement of Darwin's doctrines, which that great thinker himself foresaw and hoped for, are in progress. The new school of biologists, with the exception of Wallace and his followers, have become less exclusive partisans of natural selection; they have learned to take the truth from Lamarck and combine it with the truth from Darwin, showing development to have proceeded by the operation of natural selection, it is true, but along definite lines and not through the accident of haphazard variations; the lines of development being the result of habit and use, of action and reaction between organism and environment, and thus based not alone upon the operations of the external world, but also upon the inherent capabilities and tendencies of living matter—the distinguishing characteristic of which is thus shown to be its plasticity; not, however,

a mere passive capacity of being shaped by forces from without, but also the power of directing its own formation by forces acting from within.

This plasticity of living matter—this capability of adjustment and readjustment to changing environment, which remains in the highest degree man's endowment, by virtue of which he has spread and flourished over a wider range and under more diverse conditions than any other terrestrial being, and through which his intellectual, spiritual and social development is apparently capable of indefinite progress—demands the close attention of the physician. It is the fundamental factor underlying all his studies, the principle binding and coördinating them into an organic whole. Anatomy and physiology, comparative and special, exhibit its normal operations and their results. Pathology is concerned with its operations and their results under perverting influences. Diagnosis investigates such perverse operations with the view to discover the means by which they may be recognized and discriminated. Therapeutics studies them to discover in how far they tend to persistence or to recession, and whether, and by what artifices, perversion may be combated and restoration aided; supplementing this study by an investigation of the modifying effects of all known influences upon vital processes, normal or pathologic. This brings once more into view a fact of the highest importance both in the study and in the practice of medicine—namely, that *disease and recovery are alike vital processes in which the organism itself is the most active agent.*

This principle is neither new nor strange to this Faculty; it is old, at least, as the sage of Cos, and it has continued to inform the best medical teaching and practice from his time to the present; and yet too frequently one misses its impress from current literature and current treatment. It would ofttimes seem as though medical writers regarded the human body somewhat as a vessel in which chemic reactions take place when the appropriate ingredients are brought together; as if it were supposed to be entirely passive in both morbid and recuperative phenomena, undergoing certain deleterious changes through the operation of an active agency termed disease, against which and its results another active agency, the power of drugs, must be invoked if destruction is to be averted. Nothing could be more fallacious, and nothing so hinders our progress toward a true science of therapeutics.

The logical rule that whatever is explicated has been implicated, applies to the problems of medicine no less than to all other human experience. Neither the agents provocative of disease nor the agents used in treatment impart to the organism new qualities or introduce into its operations new powers. Their effect is merely to induce perturbations, and this only in two ways: they may modify that which is habitual, or they may evoke that which is latent; but for good or for ill, such is the full extent of their action.

Nor is any exception afforded to this statement, even by such violent perturbations as may result in immediate death; for the necessity of death is implied at birth,* and were the organism not endowed with the capacity to die as well as to live, the process of dissolution could not be effected by external influences. In other words, the very molecular constitution enabling that form of matter which exhibits the phenomena of vitality, and which we therefore speak of as the seat of vital force, to resist for a time ordinary disintegrating influences, subjects this vital matter to the necessity of gradual change, and exposes it to the possibility of sudden disruption, with loss of vital power, and return to the condition of non vital matter. Such transformation, whether it occur through gradual decay or through sudden violence, physical or chemic, we term death; but, gradual or sudden, it is inevitable, and perturbations causing it can only be said to modify by acceleration the habitual course of events.

Now this method of statement is not a mere metaphysical refinement; it embodies ideas necessary to the understanding of our subject. Modern teachers for a time refused, and indeed some still refuse, to admit the legitimacy of such an expression as "vital force." Vital phenomena were looked upon as purely chemic and mechanic, and the attempt to explain them on any other basis was considered as a survival of superstition or a revival of mysticism. That many of the phenomena occurring in organized beings are chemic and mechanic, none disputes. So do chemic and mechanic phenomena take place in electric batteries and dynamos. But as electric force is a manifestation of univer-

---

* "Ah fools, that think not how to all on earth
The very death is born along with birth."
—*William Morris.*

sal energy differing from chemic and mechanic forces, though mutually interconvertible with them and with other modes of energy; so vital force, life energy, or, as I have on a previous occasion termed it, *bionergy*,* is a mode of universal energy, differing from, although convertible into, other forms of energy, and finding its seat in living matter; but, in the present state of human knowledge, not producible from other forms of energy save through the intermediation of matter already endowed with life.

Upon the fact that bionergy is capable of transformation into chemic and mechanic modes of energy depends the possibility of organic function as distinguished from growth; and upon the converse fact that chemic and mechanic modes of energy may be converted into bionergy depends the possibility of the reconstitution of the organism by nutrition after the exercise of function, and of the successful use of therapeutic measures in combating the perturbations of disease or in compensating for their effects.

By this method of viewing the manifestations of life, whether in health or in disease, or in the process of transition from health to disease or from disease to health, certain therapeutic principles are seen to emerge. Living matter alone exhibits an opposition to the otherwise universal retrograde metamorphosis of energy — integrating its atomic bonds, as Cope has said, by "antichemism" —that is, with the absorption, and not the dissipation, of motion as manifested by heat. As this is the fundamental condition of anabolism, alike in growth and repair, the necessary connection of repose with constructive and recuperative processes becomes evident, and the therapeutic value of rest is established upon a positive rather than a negative basis; upon fundamental principle rather than on mere empiricism.

Furthermore, as, generally speaking, the agents used in treatment, apart from foods and heat, bring into the organism no new store of energy, though they may unlock its reserves or guide its activities into special directions, and as the exercise of function—katabolism—results in the disintegration of tissue and dissipation of energy, the dangers, as well as the legitimate uses, of so-called stimulating remedies become apparent. If in one instance the emergency calls for sudden putting forth of force, as when a horse is about to leap over a chasm, and the spur may therefore be imperatively demanded, yet in another instance it may be better to avoid such explosive action; and in none can it be continued indefinitely. Diminution of the functional activity of the heart in certain conditions may be a necessary part of the rest of recuperation, and the drugs with which we goad it into function will exhaust rather than strengthen. The oxygen that in a case of lobar pneumonia may aid in supplying the suffering organism with the energy needed to carry on its operations, or that in a case of anemia may similarly improve the nutritive processes, may hasten death by too great excitation of chemic changes in a case of pulmonary tuberculosis. Strychnin, ammonium compounds, alcohol, all of the highest utility in certain emergencies and in regulated dosage, all serve to exhaust reserve energy when pushed beyond the point at which constructive processes can keep pace with the destructive processes they initiate. If alcohol at times saves the tissues from the combustion of fever, it is as a food, not as a stimulant, and the growing experience of the best physicians is more and more restricting this field of its use.

Similar considerations, both as to the usefulness and the basis of sound therapeutic theory, come into view if the problem be approached from the historic direction. Such a study would give material for many papers. Here we must restrict ourselves to the most sketchy outline. Medical progress, like that of all other human knowledge, has proceeded not in a straight line, but in a spiral, forever returning upon itself, but forever rising to a higher plane. Now, if we seek to discover the axis about which this spiral revolves, and which, therefore, represents the direct path of progress, we find it in the recognition of that power—or rather that constitution, that aggregate of conditions—termed by Hippocrates *physis*, by Sydenham *natura*, to which is due the faculty of the organism affected with disease to recover its primal integrity of structure and of function.

In different ages this power has been variously described, variously interpreted, in order to bring its operations within the compass of thought by coördinating them with the general trend of philosophic speculation; the language used depending less upon the facts of observation than upon the prevailing hypotheses of the constitution of the world in general and of life in particular. We are inclined to cavil at some of these methods of

*A System of Therapeutics: Edited by H. A. Hare; article "Tuberculosis," vol. i, p. 721. Philadelphia, 1891.

expression or interpretation. The *archæus* of Van Helmont is to us the product of a disordered imagination or of superstitious mysticism. We declare that the *anima* of Stahl was an unphilosophic conception, impossible to one entertaining just ideas concerning the operations of the human mind and body; while Cullen's *vis medicatrix et conservatrix naturæ* is a vague expression which explains nothing. Yet which of the terms current in our contemporary philosophy or in our scientific nomenclature will stand better before future generations?

As the languages of nations vary, so do the languages of eras. As he that would translate from a foreign tongue into his own vernacular must saturate himself with the spirit not alone of the author but of the people and the language from which he is translating; so, if we would derive instruction from the students and thinkers of the past, or even if we would only correctly estimate their language, we must try to saturate ourselves with the spirit and the trend of the era, to understand in some degree the contemporaneous development of civilization, the state of arts, letters and sciences, and the predominant philosophic theories. In such a spirit we should find that, however various their language, however different upon the surface their explanations, however contradictory or inconsistent at certain points their systems, however much of the false and the ephemeral may have been combined with the true and permanent, yet Hippocrates and Van Helmont, Sydenham and Stahl and Hoffmann and Boerhaave and Cullen, and even the erratic Paracelsus, were at one in recognizing that great factor that lies at the basis of medical science and therapeutic progress — in recognizing the fact that the power of the human body to recover health, that which the unthinking call "cure" and the philosophic "recovery," comes from within and not from without, as a natural endowment and not as a gift of art.

Attempting to place this principle in language harmonizing with the generally accepted views of our own day, it may be well to consider more particularly for a moment what we mean by nature, what we mean by health and disease, and what we mean by recovery.

Nature to us is not a personality or a power, though the term may thus be used conventionally or metaphorically. Whatever view we may take of the origin of the universe, whether we believe with the inspired poet of old, that "In the beginning God created the heavens and the earth" and all that they contain, or whether we are content with that narrower view which looks upon the Power behind phenomena as equally unknowing and unknowable, yet in scientific language we can only mean by nature "the totality of observed [or possible] coexistences and sequences." We say that it is nature which in spring renews the beauty of the earth, making the bird to sing to his mate, the flower to yield its fragrance; by which we mean that this association of events has regularly recurred during the entire period of remembered or recorded human observation, and that hence we expect it to continue to recur as a matter of course. So when we speak of recovery from sickness as being due to nature, we can only mean that it is the ordinary course of events for the disturbances we call disease to subside and the state of order we call health to be re-established, and that this takes place because it is a necessity following from the constitution of the world in general and of living beings in particular.

When we speak of health and of disease we do not speak of entities or forces, but of states of the organism. It is usual to define each of these states by negativing the other: He is in a state of health who is not sick; and he is in a state of disease who is not well. And perhaps no definition can be constructed that upon final analysis shall be any more satisfactory. We may nevertheless try to describe the states which we term health and disease in such a way as to bring out more clearly the relations in which they are contrasted.

We speak of health and disease only in relation to living beings, and perhaps the best definition of health is one based upon Mr. Herbert Spencer's definition of life. Life, according to Mr. Spencer, consists in the continual adjustment of internal relations to external relations. This statement, removed from its context, may not appear very lucid at first glance, but reflection will show that it embodies a profound truth. The living being, in order to maintain life, must be in a state of continual adjustment and readjustment with his environment, the external world. If, for example, the external temperature falls, the nervous system and other thermogenetic mechanisms of a warm-blooded animal must be brought into activity, so that, manufacturing more heat, he is able to maintain his temperature at its normal

level despite the fact that the external cold increases his heat-loss; while heat-loss may likewise be in some degree controlled by the constriction of peripheral vessels and other physiologic reactions. This is an adjustment of an internal relation to an external relation, the external relation being low temperature, the internal relation that is adjusted to it being the thermal mechanism of the animal. A further example quite pertinent to our studies may be found in the reaction of an animal invaded by pathogenic micro-organisms, let us say diphtheria bacilli. The first result is the production of a poisonous product, called, in the case supposed, diphtheria poison or diphthero-toxin. Thus far we may suppose the invaded organism, *quâ* organism, to be passive, the effect being biologic on the part of the microbes but chemic on the part of the animal tissues. If the production of this toxin were allowed to proceed unchecked, and if nothing intervened to expel, antagonize, or neutralize it, the animal would die; but the life energy comes into play—the cells and fluids, whether indirectly through nerve stimulus or directly by chemic or more recondite process, react further against the toxin, and, to use Spencer's language, "adjusting" themselves to it, produce an antagonistic substance, called, therefore, antitoxin. The antitoxin counteracts the effects of the toxin, and if it is produced with sufficient rapidity and in sufficient quantity the animal recovers. Thus the maintenance of life depends upon the power of the animal to adjust its internal relations to the varying relations of the external world. *Health is that condition in which this adjustment may most readily be maintained.*

An imperfect or disordered mechanism of heat-regulation or heat-production, nervous or vascular, may react imperfectly or excessively to the stimulus of external cold, and lowering of temperature, general or local, results, with profound lesions or perhaps a lethal termination. The power to produce antitoxin may be wanting or impaired through some failure of the delicate mechanism of coördination, and death thus be inevitable. But further than this, during the period occupied by the reaction that is to restore the adjustment between an animal and its environment, there is often a disturbance—in part physical and chemic, but essentially biologic—of the relations of its functions to each other. Such derangement may be the direct result of the change in external relations—in the cases supposed, the change of temperature or the activity of the microbes—or an indirect result of the excessive or diminished activity of some particular function or functions thrown out of relation with the rest: thus, in the case of diphtheria, fever indicates a derangement of thermic relations which may be due to excessive heat-production or diminished heat-loss, or both, while dyspnea shows a derangement of relations in which lessened respiratory function and increased muscular function are mingled. This *disturbance of internal relations* we term *Disease;* some of its manifestations exhibiting a tendency to the impairment or termination of life, others being evidences of the struggle to restore the adjustment between internal and external relations and therefore tending to the preservation and perfection of life—a point not of mere theoretic significance, but always to be borne in mind by the practical physician: for it is obvious that with respect to the one class of disturbances, those tending to the impairment or termination of life, therapeutic intervention may be required to oppose them; while in respect to the other class, those tending to the preservation and perfection of life, therapeutic intervention will either be unnecessary, or, if required, will be required to regulate or aid, never to oppose.

To repeat: *Health* is *the balanced condition of internal relations*, that state in which, with integrity of structure, all the functions of the body are performed, each with reference to the other, at proper times and in a proper manner, so that internal equilibrium is preserved; and *disease* is the opposite of this—*any state in which, usually with concomitant alteration of structure, there is an excess or defect of one or more functions in relation to others*, whether such perversion (excess or defect) be manifested in time, in quantity, or in quality.

Such being our conception of health and of disease, it is evident that the state which we call disease may be brought about in various ways—from failure of internal adjustments (autogenetically, intrinsically); from failure to react properly to changes in external relations; or in the process of reaction and readjustment (heterogenetically, extrinsically); and will exhibit a multiplicity of phenomena. Certain of these phenomena we find to be commonly associated and to have common antecedents; and grouping together such common associations of sequence and coexistence we erect them into what we term

diseases. It is unfortunate that the same word should be thus used to denote the general state of unhealth and the association of special phenomena or relations of unhealth. For upon a clear understanding of the difference between disease and diseases depends much of our knowledge of medical principles, and the indiscriminate use of the one word leads often to an ambiguity of expression only to be avoided by awkward periphrasis.

Ambiguity of expression can scarcely fail to cause confusion of thought. It was upon such a confusion of terms that the Brunonians and their opponents waged their controversies over the unity or diversity of disease—both being right; for the state of disease is unquestionably a unit of generalization, while the special diseases are multiple and diverse groups of phenomena — diverse, however, only in their association, not in their basic elements. It may, again, seem that this is a metaphysical refinement without practical bearing. History, however, shows its importance. The Brunonian error of thought led to many errors in treatment, some of which (especially the practice of over-stimulation or ill-timed stimulation in so-called asthenic diseases) traditionally and empirically survive for ill to-day; perhaps most largely among those who have never heard of Dr. John Brown.

It would be desirable, in any extended explication of the principles of medicine, to devote special attention to the laws of association of symptoms, lesions and causes by which we are justified in discriminating one train of morbid events from another as a disease. The failure of all systematic nosologists and nosologies, from the earliest times to the present, might be found to rest upon a more profound basis of fundamental facts and relations than has been generally admitted. For therapeutic purposes, too, the discovery of such laws would be important, for they would at once increase the factors, and simplify the elements, upon which rational treatment might be based. In this essay, however, I can merely call brief attention to certain etiologic facts already alluded to, but needing some little elaboration.

We have seen that the organism itself is to be included among the factors of disease; not only in the limited sense admitted by current teaching concerning predisposing causes, or in that very partial and faulty view of the morbid processes excited by micro-organisms which is summed up in the phrase, repeated and reiterated *ad nauseam*, of "seed and soil," but in a far more profound and fundamental relation.

Our common errors of thought and expression in this regard may be traced back to a fundamental error in the method of viewing natural processes as a whole—the separation of matter from force, of the actor from the power, which the schoolmen of mediæval Europe inherited from the Greek philosophers, and which the authority of Descartes long imposed upon the modern world. Advanced investigators in physics of the present day, however, look not, with Aristotle, for "prime movers," but recognize the incessant motion of matter as a manifestation of its own inherent properties. So, too, though habits of language frequently involve us in expressions seemingly contradictory to this rule, the isolation of any one of a given number of antecedents, as *the cause* of the sequence following their conjunction, is regarded as unphilosophic.

Mathematicians have always recognized the principles here involved: xy is the product of x and y, whichever may precede in time. So the complexus we term an infectious disease is the product of the animal organism x and the microbe y; and is not, as we commonly say, regarding the animal organism as passive, produced by y. Now this opens the way to a conception of great importance in therapeutics—that of the multiple etiology of certain diseases that we are inclined to look upon as specific; for example, diphtheria, tuberculosis, and typhoid fever. Given a train of mechanism, for example a clock, it matters little whether the driving power be weight, spring, or electric action, whether the pendulum be started by a push from the hand or the attraction of a magnet; once the wheels are set in motion they pursue a definite course depending upon their conformation and mutual relations, and the physical laws governing such combinations. So, such of the phenomena of disease as are known to be common sequences of various exciting causes are admittedly to be explained by the constitution of the organism; but may not many of the phenomena for which we seek single exciting causes be similarly the effect of more than one agent? The decision, of course, depends purely upon the evidence attainable; but there is no *a priori* reason why a chain of events essentially the same in each instance should not follow the incidence of any one of several so-called exciting causes. "Such a phe-

nomenon, at all events," says Rolleston, "as a living animal is often enough produced by two or more distinct processes within the limits of the same species: as, for example, from ova of different character, summer ova or winter ova, impregnated or unimpregnated ova; by fission or gemmation; through two different series of metamorphotic changes; and such a phenomenon as the production of a particular tissue may depend—in the case of adipose tissue, for example—upon the employment in nature's laboratory of one or the other of two different chemical compounds." Similarly, Cope points out that in animals of different orders, identical structures may come into being by different evolutionary routes.

Another important feature in the synthesis of disease in complex organisms such as the human body, needs likewise to be considered. The body is made up of organs, the organs of tissues, the tissues of cells, the cells being that from which all else proceeds. In addition to the life of the organism as a whole, each cell has its own independent life, just as the individual man in a community has his independent life. The life of the organism depends upon that of the cells, and that of the cells upon that of each other and of the organism as a whole. Hence result not only the evolution and importance of communicative and coördinating mechanisms (the vascular and nervous structures), but likewise the production of widespread perturbations from disturbances of a single part; such perturbations following, as we have seen, a certain chain of association independent of the exciting cause. Further, an important difference between the cell life when isolated as an entirely independent unity, and the cell life when continuing in a community, relates to the disposal of waste, whether produced by the chemic decomposition incident to the exercise of function or by the rejection from the absorbed materials of those unsuited for nutriment. The isolated cell discharges these directly into the outer world; the associated cell often discharges them into the vascular channels of the organism of which it is a part. Each cell must, therefore, have become habituated to endure the presence of the ordinary excreta of other cells, and indeed some of these are utilized nutritively or as stimulants of function, or in other ways not clear, by special organs or by the organism at large.

If, however, these excreta become altered quantitatively or qualitatively, or find unusual channels of distribution, they may interfere with normal processes or act as excitants of morbid trains of action. All toxins, therefore, are not of extraneous origin, and we have to deal therapeutically with poisonous products of metabolism, autogenetic toxins, in addition to heterogenetic toxins introduced from without, or those that are the result of the action of invading microbes.

The chemic and pathogenic similarity not only of these different classes of toxins, but also of leucomaines, ptomaines, and vegetable alkaloids, has a fundamental origin in the constitution of living matter and in that vital reaction of the organism which we find at the basis of all pathologic as well as of all recuperative processes. The natural process of dealing with the products of waste—namely, by excretion—explains many of the symptoms of disease, and justifies not only the ancient doctrines of peccant humors and critical evacuations, but the good old practices of cleansing the *primæ viæ*, of producing therapeutic discharges by the emunctories, and of removing by the lancet useless and waste-laden blood, as in uremia and some cases of pneumonia.

But in speaking of venesection and therapeutic evacuations it may seem that we have become recreant to our faith in the *vis medicatrix naturæ* and are professing allegiance to an usurping *vis medicatrix artis*. It was long ago pointed out that in stating one truth, or rather one phase of universal truth, strongly, we are liable to fall into the error of minimizing other truth. In endeavoring to show that recovery is a natural process, we have perhaps unduly obscured the fact that natural recovery is not always effected; nor when effected is it always complete. In the more detailed study of the subject, therefore, there are many modifying circumstances to be considered. Time will permit in this paper but brief allusion to a few of these. Let us view, for example, the great differences between acute and chronic processes; between those storms which in time pass over, and those slow disturbances and degenerations which persist indefinitely, extending continuously or with alternations of repose. It is quite obvious that whereas under some circumstances the organism, unaided by art, may be capable of adjusting itself to the conditions brought about by the exciting agents of acute diseases, yet it does not overcome in a similar manner chronic morbid processes. In such chronic conditions, therefore, we have to consider many

facts which do not enter into consideration in the acute. The primary exciting cause may have long since ceased to act, as in the tissue-degenerations following certain of the acute infections—for example, syphilis, or some of the varieties of so-called rheumatism. The change brought about in the tissues may be stationary and in itself of comparatively little consequence, and yet through its location produce disorders by its interference with important functions; as, for example, changes in the endocardium limited in extent and which would be unimportant in character were they but situated upon the skin. It is true that natural compensation does take place to great extent in endocardiac lesions, and we know, for example, how life may be prolonged and comfortable with the existence of valvular incompetency; but such compensation is effected by overgrowth of the cardiac muscle, and in time, even under the most favorable circumstances, ceases to be maintained. Here, therefore, is a proper field for the exercise of art in prolonging the time of compensation and in averting or combating the consequences of failure. Let us suppose, however, that the accidents—that is to say, the unknown antecedents and coexistences—of the primary infection or intoxication have so altered the cardiac valve or orifice that not insufficiency but obstruction is the result: how much more difficult becomes the effectuation of natural compensation! how imperfect it usually is, and how much greater care and judgment upon the part of patient and physician are necessary to avert or postpone evil consequences! Or let us consider the degenerations that take place in organs of secretion and excretion, as the liver or the kidney:—the nephritis that follows an acute infection, and in which through tissue-memory, essentially the same fundamental property of bioplasm that permits of progress, the perverted processes persist, and continue to interfere with the important functions of the organ; or the cirrhosis, whether due to alcohol or to other exciting agent, the immediate influence of which has long since ceased, the more lowly tissue continuing nevertheless to grow at the expense of the more highly organized, checked perhaps, but not brought to an end, by natural process, and leading to portal engorgement, dropsy, and other well known phenomena. Here, too, the art of the physician is called upon to maintain, so far as he is able, the function of the damaged organs; to awaken where possible compensatory processes in other organs; to remove morbid products—toxins and effusions; to postpone or to avert the grave consequences of impaired function. Still more difficult problems are presented by the grave degenerations of the nervous system, the scleroses of the cord, the indurations of the brain, which modern pathologists attribute to the continued results of a past infection. The object of art must be to try to find some means to accomplish the result that nature has been unable to accomplish, and to hold in check the retrograde metamorphosis of tissue. Failing this, endeavors to prolong life and to promote comfort by symptomatic treatment, hygienic and medicinal, are not only justifiable but necessary; and experimentation must be conducted both in the laboratory and at the bedside.

The general problems presented by acute diseases are much simpler, and the power of natural recovery more manifest; yet even here we are compelled to qualify any statement implying the complete efficiency of the organism to recover, when unaided by art.

Among the children of civilized nations that chain of disturbances and restoration to which we give the name of measles, is ordinarily of minor importance; with the most simple precautions, and sometimes with none, recovery takes place in the vast majority of cases. Yet we all know the awful fatality of the disease among the natives of New Zealand, when introduced into that island by English newcomers; and even in our own community the death-rate of measles has not become *nil*, nor have we yet succeeded in tracing thoroughly the secondary disorders which it may excite or toward which it may be a predisposing factor. Moreover, we still recognize in this affection, as more dreadfully in others, malignant or fulminant cases in which life succumbs almost without a struggle. Let us consider, moreover, diseases essentially fulminant, such as cholera, which in the preponderance of instances the organism is unequal to combat. What greater contrast, indeed, could be offered than by two diseases, both attributed to the poisonous products of micro-organisms, in both of which the alimentary canal, indeed the intestine, is supposed to be the point of entrance of the infectious agent, both conveyed to large extent through water contaminated by the excreta of previous cases—cholera and enteric fever! Enteric fever slowly reaching its acme, slowly declining, two-thirds or three-fourths of the patients recovering if left alone; cholera prostrating almost at a single blow,

reaction occurring late and suddenly if at all, and failing to be maintained in the greater number even of those cases in which it is manifest. We have learned that art can do much to increase the number of recoveries in typhoid fever by simple measures directed toward the removal of conditions which obstruct the natural recuperative process, and which make no attempt at specific destruction or neutralization of the microbe or its products. Here the Hippocratic maxim, "To do good, or do no harm," is especially applicable. But in cholera we know that art must find some means to supplement nature, when once the natural barrier to infection, the healthful condition of the gastric secretions and of the intestinal mucous membrane, has been broken down. It may be that the intestinal flux in cholera is but the exaggeration of a form of reaction often useful in the expulsion of noxious material, but whether it be so, or be essentially morbid, it is a direct source of danger, to be checked if possible. Not only laboratory but clinical experiments toward the destruction of the pathogenic organism of cholera, toward the neutralization of its toxic products, and toward the mechanic and chemic counteraction of its symptomatic dangers, are eminently justifiable—are necessary. While, however, awaiting the discovery of radical or specific remedies, an enlightened art will seek to discern in such a process the main danger and to endeavor to avert this by opposing its mechanism, thus sustaining life while bringing into play that principal element in the natural readjustment—time. The two facts, that even among ordinarily mild affections fulminant cases may occur, and that even among fulminant diseases cases of spontaneous recovery are known, may here be placed in juxtaposition, and much may be learned from the relation thus made manifest. Given time to bring its reserves into battle, the human organism will conquer the hosts of microscopic invaders. This it has learned to do, during its ages of evolution, through the operations of the natural laws of action and reaction and the hereditary transmission of acquired properties, in the case of those milder acute affections which still show signs of their ancient virulence when brought among populations hitherto unaccustomed to their presence; for, one of the main facts made clear by the coordination of pathology with biology is that in proportion to the frequency with which given disturbing influences have been encountered and overcome in the evolution of the race, the more fully developed is the reaction-apparatus, and the more rapidly and completely is its work performed. The education of the automatic process of reaction is incomplete in the case of fulminant and malignant diseases; yet, nevertheless, though tardy, the power is there, and requires only the opportunity to be brought into exercise.

To return to our illustration of cholera: we observe as the most dangerous train of phenomena—as that against which art must exercise its supporting power until such time as it learns to oppose more directly the proximate or exciting causes of the morbid processes—the rapid removal from the system of its fluids, with consequent loss of heat and inability to effect those mechanic and chemic changes which depend upon the presence of heat and of fluid. The practice of supplying heat and fluid as early, as promptly, and as continuously as possible, by external applications, by enteroclysis, and by hypodermoclysis, while at the same time endeavoring by the use of appropriate drugs to counteract symptomatically the morbid mechanism or diminish the violence of its action, has accordingly been the most effective means of bringing about recovery in an increasing number of cases; yet the comparatively late introduction of these most important measures into general practice, despite the fact that they have been from time to time advocated by theorists, is a proof that to depend upon empiricism only, without philosophic reflection to direct and interpret it, is to fail of the highest possibility of achievement.

It has been said that fever and its treatment constitute the touchstone of medical theory and practice. Throughout medical history there have been those who taught that the phenomena of fever were evidences of the reactive power of nature against the agents of disease; and although there have always been others who held opposite theories, this Hippocratic doctrine may be accepted as a final truth. Had this principle been formally taught and thoroughly engrafted in the minds of our profession, we should not recently have witnessed the melancholy abuses of antipyrin and similar agents, of which it may be said that if typhoid fever or influenza has, like Saul, slain its thousands, the antipyretic drugs have, like David, slain their tens of thousands.

The importance of time as a therapeutic element has been alluded to. This finds a striking illustration in that greatest advance of modern therapeutics, which we have al-

ready mentioned in illustrating the mechanism of natural reaction, the so-called serum or antitoxin therapy, the production of the agents and their usefulness both involving this factor. While we need not dwell upon the well known details, it may not be amiss to point out that, whereas against such processes as diphtheria, tetanus, scarlet fever, and the like, the method may and should be employed when available, yet the endeavor to treat tuberculosis similarly does not seem to be founded upon a rational basis. The principal, I had almost said the essential, agent in the morbid complexus of tuberculosis is the constitution of the patient, and neither the bacillus nor its toxin. Furthermore, toxemia is one of the latest phenomena in cases of chronic tuberculosis, and in acute tuberculosis the dissemination of the poison and the destruction of the organs is usually so great by the time the toxemia is manifest that there seems to be little chance for antitoxin to act curatively. However, it is well to observe an expectant attitude towards the observations now in progress, and to adopt the method if it should at any time seem to recommend itself through the experience of competent and unbiased physicians.

Another great modern advance is organotherapy, that method—most strikingly typified by the use of extract of thyroid gland in myxedema—which aims to supply deficiencies in the functional activity of certain human organs, principally the ductless glands, by the administration of substances derived from similar organs in animals. It is not merely the administration of certain products derived from the animal kingdom, similarly to the administration of other products derived from the vegetable and mineral kingdoms, for the sake of certain anatomic and physiologic results which these substances are capable of effecting (extrinsic or heterologous therapy), but it depends upon a closer and more intimate—a more fundamental—relationship between the drug and the functions of the human organism than exists in the other cases (intrinsic or homologous therapy).

It will be observed, however, that the administration of pepsin in indigestion, of thyroid extract in myxedema, of bone-marrow in anemia, of adrenal extract in Addison's disease, and the like, have nothing whatever in common with that pseudo-scientific method through which an unpleasant notoriety was, not long ago, given to the subject of "animal extracts." I have elsewhere treated this subject at length;* here it may suffice to say that the functions of the heart, of the kidneys, and of the brain, and the results of the diseases of these organs, are so different in character from the functions of the thyroid, the adrenal, bone-marrow, and the like, and from the diseases engendered by failure of these functions, that one scarcely sees how the idea arose that the method of therapy scientific in the one case possessed an analogue in the other.

In connection with this subject, a point we have but briefly touched upon may be brought into prominence, namely, that certain pathologic phenomena are partial reversions of function and structure to earlier types in the evolution of the individual or the race; thus patients with acromegaly—a condition associated in some manner, yet obscure, with morbid alteration of the thyroid and pituitary glands, and in some cases apparently controlled by the therapeutic exhibition of preparations of one or the other—exhibit certain striking skeletal resemblances to prehistoric men, such as those of Neanderthal, and to the anthropoid apes.

In connection with disorders of metabolism such as gout and diabetes, this principle of reversion is already recognized by comparative pathologists, and much may be expected from its further development. So, too, in some cases of visceral and neural degeneration, and especially in the domain of psychic disorders, it has been usefully applied in diagnosis and in treatment. That the opposite is also true, however—that disorders which in the present state of human evolution are looked upon as diseases may be due to premature progression in certain directions—has not been as yet recognized by the consensus of professional opinion. Certain progressive ophthalmologists have called attention to the influence of that environment we call civilization in the production of errors of refraction, predicting a final adjustment in which spectacle-makers will, with the Moor, wail their occupation gone; but the same principle can be applied much more widely. Disorders of the alimentary canal, like diseases of the teeth, are largely due to a want of harmony between these structures and their present environment, and may be expected to diminish in number and importance as on the one hand we learn better to choose and prepare our food, and as, on the other hand, our viscera become modified in

* *The Philadelphia Polyclinic*, Nov. 15, 1893.

construction and function in accordance with the conditions of civilized life. But it is especially in regard to nervous disorders that this principle requires extended study and application; and as the processes and results of degeneration have been exhibited to us in so masterly a manner by Lombroso and Nordau, so should some of our great neurologists analyze and set forth what we may truly term the factors of regeneration—namely, of that new and higher birth of mind and soul of which man's present state is but the promise.

There are many other facts that should have been considered in a paper of this kind, such as the tissue-changes of inflammation and of neoplasms, and their therapeutic indications; and in the growing field of mental therapeutics, the legitimate exercise of the powers of mind over body, so long permitted to be abused by miracle-mongers and charlatans; but I have already trespassed too far upon your exceeding patience and courtesy.

My sermon has been based upon this text from Hippocrates: "The physician must be able to discern the antecedents, know the present, and foretell the future—must meditate upon these things, and have two special objects in view with regard to disease—namely, to do good, or to do no harm. The art consists in three things: the disease, the patient, and the physician. The physician is the servant of nature, and the patient must combat the disease along with the physician."

In the elaboration of this text, the main thought which I have endeavored to express is this: That if we hope ever to understand the normal operations of the human body and mind, or their perversions, or the methods by which these perversions may be prevented or corrected, we must be able to bring them into line with the fundamental facts of general biology and to avail ourselves of all the aids which may be gained from collateral sciences. We must understand, so far and so fast as the progress of general biology and allied sciences renders possible, the nature of the life substance and the life force, the modifications which these undergo under various circumstances, and what are the circumstances that are capable of modifying them. We must attain to as full a knowledge as possible of the various steps through which man has passed, physically and mentally, mechanically and morally, not alone in the development of the individual but in that of the race, for only thus can we understand the forces tending to departure from that which we are pleased to call the normal standard; whether in the direction of reversion to more primitive forms and processes, or in the faint beginnings of the more complex, which in their full fruition shall enable our posterity to solve without difficulty problems that to us appear inexplicable. We must recognize the dependence of man on his environment, as well as the power of man to modify that environment, and especially must we bear in mind the fact that the evolution of man—the tendency to progress—has been toward the development and improvement of his nervous system, while other parts of his physical organism have remained in a condition less perfect than that of some of his brute relatives; that, in fact, the very condition of his progress has been not alone the diversion of energy from muscular and osseous systems to the nervous system, but also the maintenance of nervous structures in that plastic state, impressionable to the outer world and responsive to the inner workings, which alone permits of further modification and the assumption of new powers. Thus, in the course of nervous modification, before adjustments to new conditions have been completed, while the evolutionary process is still, as it were, experimenting, before choosing that which will best tend toward the end in view, and while the general plasticity and impressionableness, permitting of the development of variations from which natural selection may choose, remains, we must expect a vast increase in the number of nervous disorders; but we must also learn to distinguish among them, so that we may not misinterpret as evidences of maladjustment or degeneration, processes which are the manifestation of a tendency toward readjustment, toward the generation of new powers and new faculties. So distinguishing, we must learn, moreover, to act in harmony with these new developments, for man alone among the vast number of living creatures has the power to consciously modify his environment and control in a measure his own evolution.

Secondly, I have endeavored to show that certain great truths concerning the nature of disease and recovery have been recognized throughout the course of medical history, and have always influenced the best teaching and practice. Here, two principal themes were elaborated: *First*, that disease and recovery are vital processes in which the organism plays an active part; in some instances, one continuous process. *Second*, that neither morbific nor therapeutic agents endow the organism with new qualities, or introduce into its

operations new powers—as the one, so the other can act only by modifying that which is habitual or evoking that which is latent.

Certain subsidiary facts were found worthy of attention:

1. In disease there are presented two classes of phenomena, between which the physician must discriminate: the one, morbid—that is, tending to the destruction or impairment of the organism; the other, salutary—that is, tending towards its preservation and restoration to comfort and usefulness.

2. The tendency of the organism to react in a salutary manner is often sufficient in itself to insure complete and perfect recovery, but it may be either deficient or excessive in several respects, especially as to time, degree, and extent; furthermore, processes salutary in general may be morbid in respect to particular circumstances.

3. When the processes are essentially morbid, or when they become so by excess or deficiency or by circumstances of the individual case, the intervention of art is required to assist, modify, control, or prevent natural processes, to sustain the organism during their evolution, or to avert incidental or sequential dangers or damages.

In such intervention, while we may properly use drugs and must often do so, and while our resources have recently been greatly increased by the utilization of nature's own alexiteria and functional stimulants and regulators, yet we shall learn to place greatest dependence upon those agencies—air, light, water, heat and cold, food, rest, exercise of function physical and mental—which, as the habitual environment of man or his habitual reaction to the environment, have recorded their effects in his line of development, his structure, and his faculties, and are still the most potent influences in his preservation and his progress.

---

*SACCULATED INNOMINATE ANEURISM TREATED BY THE INTRODUCTION OF GOLD WIRE AND GALVANISM.**

By E. P. Hershey, C.E., M.D.,

Professor of Clinical Medicine and Applied Therapeutics, Gross Medical College; Visiting Physician to the Arapahoe County Hospital; Vice-President and Visiting Physician to St. Anthony's Hospital.

The departure from the routine method of any operative procedure has for its greatest drawback conclusions drawn from a too early report of its efficacy. For the treatment of aneurisms various methods have been recommended, several of which have apparently been followed by good results, but the history has seldom been followed up for a time sufficiently long to acquaint us with the ultimate results of the operation. For this reason, even at this date, nine months after the operation, it is with some misgivings that the case herein reported is presented to the medical profession, although sufficient time has elapsed in which to prove that at the very least some result has been obtained in the relief and comfort of the patient, and that, too, as the history will show, after all so-called curative and palliative measures had been resorted to. We all know that when an aneurism has assumed such proportions as to cause decided bulging of the chest, the patient becoming exhausted upon the least exertion, and finally from sheer weakness being compelled to keep his bed, we can soon look for a fatal result. Then, too, after concluding from careful observation that those remedies which have found favor among the profession have been without result, any simple operative means that will enable the patient again to resume his work and be still at it at the end of nine months should be resorted to before a more hazardous operative procedure is even contemplated. It is for this reason, and this reason alone, that the history of this case is presented in detail; and if the future shall prove that the operation is not a successful one, there is no reason why some of the other methods may not then be tried.

For a year and a half previous to the time I saw the patient as consultant with Dr. Place, he had been suffering from a deep-seated pain in the chest, described by him as being beneath and a little to the right of the upper part of the sternum. He had been treated for various affections, principally rheumatism. This pain was accompanied by more or less oppression in breathing, which always became aggravated upon exertion. In the early part of January, 1895, a slight bulging of the chest was noticed, gradually increasing until the following May, when a decided pulsating tumor was found, most prominent between the second and third ribs, about two inches and a half to the right of the median line. The case at this time was diagnosed by Dr. Place as aneurism. The latter part of July this diagnosis was confirmed by Dr. T. H. Hawkins and myself, at which time the following treatment was agreed upon: As near complete rest in bed

* Read before the Colorado State Medical Society, June 16, 1896.

as possible; Valsalva's method of diet; and barium chloride, one-fourth grain, increased to three fourths grain, three times a day. At the end of seven weeks the symptoms were all exaggerated, and the patient, being familiar with his critical condition, desired the introduction of the gold wire into the aneurismal sac, to be immediately followed by galvanism; this method having been urged upon him when it was ascertained that no favorable results were being obtained from the last treatment.

Fourteen-karat gold was drawn out to No. 28 gauge by Wagner, the jeweler, who conceived the very happy idea of snarling the wire, so that after it had been passed through the needle it would bunch itself rather than coil, as was at first intended. With the proper spring it was wrapped about a glass vial and placed in a clear carbolic solution, ready for use. The needle was a large-sized hypodermic one, with a calibre for about a No. 22 gauge. This needle was prepared by Dr. E. B. Warner, who accomplished complete insulation by layer after layer of the varnish of gum shellac, each layer set in its turn by heat. A thirty-celled galvanic battery furnished the current, which was passed through a McIntosh milliampèremeter.

On the 29th day of August, 1895, the patient was prepared for the operation. The skin over the tumor was cleansed antiseptically. The insulated needle was thrust into the sac, and the blood spurted through the needle to a considerable height. This, however, was immediately controlled by the wire (it having been previously washed), which was rapidly passed through the needle. The intention was to fill the cavity with the wire, it having been previously estimated that this would take at least ten feet. A fault in the wire after two and a half feet had been passed caused it to kink, which prevented any further introduction. The wire was cut about three inches from the needle and attached to the positive pole of the battery, the negative pole having for its electrode a flat, wet sponge covering an iron plate six by eight inches and kept in contact with the skin of the back, directly opposite the aneurism. Considerable uneasiness was experienced by the patient at first, but as the current passed he became reconciled and was content to bear the pain of the negative electrode. By increasing slowly the number of cells, Dr. Lyman Ellis, who controlled the battery, kept the indicator at 70 milliampères. With everything ready, the needle, which protruded fully three-quarters of an inch, at once became a guide as to the results to be attained: its rhythmical motion, swinging laterally like a pendulum, and with each pulsation of the heart springing upwards, during full three-quarters of an hour never varied the slightest, indicating little or no change in the contents of the sac. Simultaneously with a change in the rhythmical motion of the needle came the warning from Dr. Ellis that but 60 milliampères were indicated. As the motion of the needle became less and less marked, the resistance became greater; lower and lower fell the number of milliampères, until finally 40 were indicated at the end of one hour and five minutes, when the motion of the needle was barely perceptible, and, instead of the soft, full, pulsating mass characteristic of an aneurism, was felt a hard resisting tumor much smaller, which told the story of the only change that could have taken place—the formation of a blood-clot.

Now arose the most difficult part of the operation, the removal of the needle. What little blood had flowed into the needle about the wire had become decomposed and formed into hard, dry, fibrous tissue, acting as a cement. The wire, bunched within the sac and completely enveloped within the blood-clot, resisted tension, but the needle soon yielded to the force exerted and came slowly out. Pressure was made around the point of exit, and the wire cut close to the skin. The tension being off, the wire slipped out of sight, the whole mass having evidently sufficient spring to draw the end completely within the sac.

Careful examination of the tumor an hour later disclosed at the extreme right portion some softness, as of a liquid confined to a small space. This was evidently blood-serum confined to the upper and outer portion of the sac. All signs of this, however, disappeared in a few hours. Upon auscultation no murmur could be detected. The temperature rose that evening to 99.8°, the following evening to 100°, but after that the thermometer never indicated at any time a temperature to exceed 99°. That night the patient, for the first time in seven weeks, was able to sleep while lying on his back. During the following month of September, the improvement in his condition was marked. In October he returned to his work. In the latter part of December I presented the patient to the students of the various colleges who had assembled at the County Hospital; at this time his general appearance was excellent,

he had gained in weight and felt no inconvenience from the tumor within the chest, except that occasionally he had pain in that region resembling neuralgia. The tumor had somewhat contracted, but not to the degree hoped for.

At the time of this writing (June 16, 1896), nine and one-half months after the operation, the symptoms are about the same as they were during the latter part of December. The presence of the wire may have considerable to do with the pains in the chest. The symptoms of aneurism have all subsided, and the patient remains to be closely watched for future developments.*

It would be useless to occupy your attention by enumerating the different drugs used in the early treatment of this disease. Suffice it to say that one by one they were laid aside while the aneurism continued to increase, and day by day the case was closely watched with the expectation of the usual termination of these cases. To open up a discussion as to the merits of the operation would be more interesting and certainly fruitful of better results than to repeat the old story of drug therapy in the treatment of aneurism.

Discussion as to the solidification of the contents of an aneurismal sac has led to two beliefs—on the one hand, that it is an actual clot-formation; on the other, the formation of plastic fibrous tissue poured out by the sac-wall. In the case just related there is scarcely any necessity for discussion. No matter how greatly the wire and electricity may have irritated the sac-wall and started up inflammatory action, it is beyond all experience to find as a result the formation of solid fibrous tissue in so short a time. This may possibly be nature's method of bringing about a cure, but it certainly was not so in this case. The condition of the canal of the needle would show this without a doubt. Then, too, although results in the past from the use of electro-puncture have been poor, post-mortem examination has always revealed clotting to a greater or less extent.

The simple introduction of wire into the sac, as first tried by Moore of London—the purpose being to whip the blood into a clot—met with no success; but then, taking into consideration the fact that twenty-five feet of wire was inserted, and antiseptic methods were not carried out, we cannot wonder at the lack of good results. Later on, horsehair was used by Levis; and still later on, Schrötter of Vienna used Florence silk—with the same ungratifying results.

The method suggested and tried recently by McEwen is not without promise, but its hazardous nature and the difficulty of carrying it out will deter many from resorting to it. McEwen's method consists in scratching the inner wall of the aneurism, thus setting up inflammatory action and thereby strengthening the wall. This delicate manœuvring within the sac, knowing as we do that the wall is at times so frail that little force is necessary to penetrate it, requires a bold operator indeed.

There have been in all ten cases reported upon this combined method of treating aneurism, counting the one now under consideration.

Burresi's* case: Aneurism of ascending part of aorta; current for twenty-five minutes; 17 inches of No. 30 wire used; operation well borne; pain entirely gone at the end of three days; formation of firm clot. Death at the end of a hundred days. Electrical current, tested by a voltmeter, yielded one cubic centimeter of hydrogen gas for the first minute.

Barwell's case: Large aneurism of ascending and transverse part of aorta; ten feet of finest steel wire passed into one division of the sac; ten milliampères for one hour and ten minutes; signs of consolidation at the end of six hours; on fourth day rapid increase of secondary sac. Death on seventh day. Necropsy showed primary sac contained much thick, firm, decolorized fibrin closely united to sac and wire.

Roosevelt's case: "Aggravated aortic aneurism threatening death," involving four ribs on the right of the sternum; 225 feet of fine steel piano-wire introduced; 25 milliampères passed for one-half hour; less pulsation the second day; seventh day, better condition than previous to operation. Death on the twenty-third day.

Abbe's case: "Rapidly advancing aneurism at root of neck;" 100 feet of No. 1 aseptic catgut passed into sac; one part of tumor seemed firmer, but rapid advancement in another part. Ninth day thereafter, 150 feet of fine sterilized wire was passed through

*A letter received from California states: "All neuralgic pains gone. Electrolysis produced in his case beneficial and, so far as we can judge from observation, permanent results."

*Cases cited and bibliography mainly dependent on article upon this subject by D. D. Stewart, *American Journal of the Medical Sciences*, October, 1892.

insulated aspirator needle; for one-half hour a current of 50 milliampères, the anode the active pole, was applied, followed by 100 milliampères for one hour, reversed cathode the active pole; pulsation continued; tumor-wall firmer. Tumor-wall ruptured on second day.

Kerr's case: Fusiform aneurism from base of heart to origin of left subclavian artery; six feet of silver wire introduced; current applied for fifty minutes—strength not given; pain and pulsation greatly relieved. Death on eighteenth day. Necropsy showed that a firm clot had formed about the wire as well as on the sac-wall.

Kerr's case: "Aortic intra-pericardial aneurism;" electrolysis tried without success; then electrolysis through introduced wire—ten feet of drawn silver—current one-half hour, strength not given. Patient lost sight of one year later. No symptoms up to this time. Patient stated he "was feeling as well as ever." This case considered a cure.

Rosenstein's case: Aneurism in ascending part of arch; galvano-puncture tried twice; first, single needle, 70 milliampères for twenty minutes; second, thirteen days later, repeated with two needles; no beneficial results. Five and a half weeks later a little over two feet of wire was introduced entirely into the sac; current applied thirty minutes—presumably 70 milliampères as above, though not stated. Pulsation disappeared the seventh week, complete recovery following.

D. D. Stewart's case: Large advancing thoracico-abdominal aneurism; two and a half feet of wire used; current gradually increased to 70 milliampères; continued for one hour. Rupture on ninth day. Necropsy: Firm clots in all portions of the aneurism, with softened ones evidently of recent origin. Difficult to separate the clots from the wire.

Stewart's second case: Report not yet published, although the case is still living and was treated much the same as previous case three years ago,* with the exception that ten feet of fine gold wire was introduced and a current strength of 80 milliampères for an hour and a quarter employed.

With no small amount of interest will the result of this last case of Dr. Stewart's be awaited, as it was through the courtesy of this gentleman that the technique of the operation performed in the present case was learned, and there can be no doubt that upon the results obtained by such an operator can be placed the true value of this method of treatment. And, although the results in the writer's case have been gratifying indeed, in Dr. Stewart's hands they must have been even more satisfactory.

In most of the cases narrated, any operation seemed hopeless, except in Kerr's second case and Rosenstein's case. Then, too, Stewart's last case will show very beneficial results. Allowing the case reported this evening to rank among the greatly benefited, and counting Kerr's, Rosenstein's and Stewart's cases as cured, we have thirty per cent. of cures, twenty per cent. benefited, and fifty per cent fatal, and in none of the fatal cases was death the result of the operation; moreover, there is a bright prospect of the case reported this evening bringing the per cent. of cures up to forty.

*The report of Stewart's second case appeared in the *American Journal of the Medical Sciences* for August, 1896.

VEGETABLE DYSPEPSIA.

By. W. A. Walker, M.D.,
New York.

Vegetable foods have a tendency to malfermentation when the salivary ferments are deficient in quality or quantity, and this gives rise to flatulence, heart-burn, eructations, and other disagreeable symptoms, to say nothing of resultant irritations which lead to permanent impairment of the mucous coats of the stomach and intestines. Then we have the condition which has been usually designated as dyspepsia. This condition leads to a state of mental depression highly favorable to the production of various forms of neurotic disturbances.

Whatever may be the cause of indigestion—bad cooking, hasty eating, improperly selected foods, or what not—it is necessary in its proper treatment not only to give dietetic directions, but to furnish ferments to take the place of those deficient or impaired. In starchy or vegetable indigestion we have an infallible agent in diastase, and the only reason the profession has not fully appreciated its value is on account of the antiquated but still commonly believed theory that diastase is destroyed soon after reaching the stomach. The theory that is now gaining ground—and it is based on indisputable facts—is that it takes at least thirty minutes after the completion of an ordinary meal for the

acidity of the stomach contents to reach the point at which diastatic digestion is destroyed.

One of the most convenient methods of treating vegetable dyspepsia, especially in children—and they are notoriously poor starch-digesters—is by giving diastase in their oatmeal or mush, or sprinkled on bread.

Bread can be made much more digestible by having diastase added to it, in the proportion of five grains to a pound of flour, mixed with the dough, and by this method the soluble matter in ordinary bread is increased fifteen to forty per cent. This bread is superior to ordinary bread in every way, and makes a delicious toast. The toast powdered and added to milk makes a most excellent food for infants.

One of the old-time theories was that by prolonged boiling (the old flour-ball process) starch was changed into dextrin; but this is not true, as dextrin does not begin to be produced until the temperature of 250° F. is reached; hence it is impossible to make dextrin by any wet process of cooking. Repeated and prolonged boiling doubtless splits the starch granules to a certain extent and renders them more soluble, but it does not produce dextrin. Starch must be converted into maltose before it is ready for assimilation by the absorbents. The salivary and pancreatic ferments perform this function in the normal digestive tract; but one essential difference which should not be lost sight of in considering a diet for children, is that the younger the child the less perfect are the salivary and pancreatic secretions. Hence the value of diastase in the treatment of children who have indigestion or are badly fed. Fat and oils are used in the economy for heat and force, and only to a limited extent produce a reserve supply of fat, which comes from starchy foods. Diastase, which is a starch-digester, is, therefore, a fat-producer. Hence it is nearly always true that people, especially children, who have amylaceous dyspepsia, are thin and badly nourished. They are the victims who succumb most readily to the germ of tuberculosis, as their blood does not have enough vitality to resist the infection.

The prevention, and often the sole hope of the cure, of consumption, lies in curing the digestive disorders; the low assimilative powers must be strengthened, and the blood-current must be increased in volume as well as in its constituent elements. There is no more fruitful field of study, and none so much neglected by the general as well as the special practitioner, as that of amylaceous or vegetable dyspepsia, and until quite recently the literature on the subject has been quite meagre, and not only unsatisfactory but misleading.

The only reliable supply of diastase in the past has been the limited and uncertain quantity found in malt extracts.

The new isolated diastase, known as taka-diastase, is stable and powerfully concentrated, and according to reliable authority is capable of converting one hundred times its weight of dry starch into sugar in ten minutes.

In giving this enzyme, we should bear in mind that its function is to aid, and in fact supplement, the ptyalin of the saliva; and it bears no relationship whatever to duodenal digestion except that the more perfect the preliminary digestion of starches in the stomach, the less work there is to be done in the duodenum.

The theory that pancreatic extracts and diastase ought in some mysterious way to find their way through the stomach into the duodenum and there begin their work, is too absurd to be entertained.

If patients with amylaceous indigestion will follow these rules, the result will be satisfactory:

1st. Omit from the dietary, as far as practicable, pastry, condiments, syrups, and sugars.

2d. Chew the food, especially bread and vegetables, slowly and thoroughly.

3d. Take 2½ grains of taka-diastase immediately after eating.

4th. Avoid any habit which causes the saliva to be expectorated instead of swallowed, for at least an hour after eating.

5th. Correct any temporary excess of acidity in the stomach by a dose of bicarbonate of soda.

57 West Ninety-third Street.

---

*RESPIRATORY EXERCISES IN THE TREATMENT OF DISEASE.**

By Harry Campbell, M.D. Lond., F.R.C.P. Lond.

In respiratory exercises we possess a very potent therapeutic agent. By their means we are able not only to develop the lungs, but also to influence in a very marked degree

*Abstract of a paper read in the Section of Medicine at the annual meeting of the British Medical Association, July 27–31, 1896.

the circulation of blood and lymph, as well as the functions of the abdominal and pelvic viscera. The advantage of well developed lungs are for the most part recognized: the greater the respiratory capacity, the more adequately are the respiratory functions carried on, and the less is the liability to phthisis, bronchitis, and other pulmonary diseases. But another advantage, much overlooked, attaches to good pulmonary development, *i.e.* the facility which large lungs afford to the circulation through them: the greater the vascular capacity of these organs, the less is the work thrown on the right heart. Now all the diseases of the left heart, but especially affections of the mitral orifice, tend to cast extra work on the right heart. Hence the great importance, in all cardiac diseases, of securing the maximum development of the lungs; and in no way can this be more effectually done than by respiratory exercises systematically carried out. In this manner we can, in a short time, increase the pulmonary capacity in a marked degree.

The respiratory movements favor the circulation of blood: with every inspiration, blood is sucked into the right heart, while the pulmonary flow is at the same time quickened. They further aid the lymphatic circulation, pumping the lymph from the peritoneal cavity into the pleuræ, and from the latter and from the pericardium into their respective lymphatics, and hurrying on the lymph in this way. Such aids to the lymph-flow are of the utmost importance in many diseases, but above all in heart disease.

The rhythmic movements of the diaphragm not only assist the flow of blood and lymph in the abdominal and pelvic cavities, but further influence the functions of all their contained viscera by rhythmically compressing and (in many cases) dislocating them. It will thus readily be seen that by means of forcible and long-continued diaphragmatic breaths we are able to exercise a profound influence upon the abdomino-pelvic viscera. In various forms of dyspepsia, as in "torpid liver," I have found the greatest benefit from their use.

Respiratory exercises are very helpful in many functional diseases of the nervous system; the benefit in these cases being largely due to their effect upon the circulation of blood and lymph within the cranium, as well as upon the functions of the great abdominal and pelvic viscera. One neurosis which may be benefited in this way may be specially referred to, namely, morbid flushing of the face —a disorder which (incredible as it may seem) may cause the direst mental agony.

One of the greatest benefits to be derived from respiratory exercises is increased mobility of the chest. This has many advantages. I will instance one. The chief trouble in emphysema is the difficulty of adequately emptying the lungs. This is not due to the incompressibility of these organs, since they can be compressed by a contraction of the abdominal muscles whereby the diaphragm is thrust upwards. It is due to fixity of the bony chest. The mean size of the latter is regulated by (*a*) the traction of the elastic lungs, which tends to diminish it, and (*b*) the tonic contraction of the costal elevators, which tends to increase it. In emphysema factor *a* gradually diminishes, factor *b* gaining the upper hand. Consequently the mean size of the bony thorax increases in emphysema. Now the chest tends to become fixed in the mean position. Hence in emphysema it becomes fixed in the expanded position, and adequate expiration is then impossible. But if in the early phases of emphysema we systematically put the patient through a series of expiratory costal exercises, we mitigate this fatal tendency to expansion.

There are three forms of breathing: (*a*) diaphragmatic, (*b*) lower costal, and (*c*) total costal (in which all the ribs are elevated). The two former can take place quite independently of one another; and the latter can be performed independently of diaphragmatic breathing. A well developed man (I cite a specific instance) is able to inspire 400 cubic inches with a total inspiration, 270 with a combined lower costal and diaphragmatic, 170 with a pure diaphragmatic breath. If the lower ribs are elevated and the chest thrust out, only 100 cubic inches can be inspired by the latter method. After a full "total costal" inspiration, no further breath can be taken in by means of the diaphragm, the lungs being then incapable of further expansion.

It is stated by Oertel that with a diaphragmatic breath the bases of the lungs are more inflated than the apices. We must remember, however, that the pleuræ enable the lungs to glide freely over the chest-walls; and therefore the lungs tend to be equally expanded in all their parts, no matter what kind of inspiration is adopted. After pleural adhesions, however, such is not the case: under these circumstances those parts of the lungs expand most where the movement of

the overlying chest is greatest. Hence with extensive pleuritic adhesions the apical parts are unable to expand during ordinary breathing, which is combined lower costal and diaphragmatic; and this predisposes them to disease. In all such cases the patient should frequently practice total costal inspirations.

---

*URANIUM NITRATE IN DIABETES MELLITUS.**

By Samuel West, M.D., F.R.C.P.,
Assistant Physician to St. Bartholomew's Hospital; Senior Physician to the Royal Free Hospital, London; etc.

Further experience during the last twelve months has confirmed the general results which I stated in my paper read before the British Medical Association last year.

The effects of the drug are, (1) to diminish the thirst, (2) to reduce the amount of urine passed, and (3) to reduce the percentage of sugar. Like all the other drugs used in the treatment of diabetes, uranium nitrate does not influence all cases equally favorably.

The clinical investigation of the action of drugs in diabetes mellitus is not by any means an easy one. It involves time and care to eliminate the many disturbing factors in the results. In hospital cases I have taken the patients into the ward and kept them for some time upon diabetic diet, until the benefits derived from dieting, rest, freedom from care and fatigue had fully shown themselves. As soon as the patient appeared to have arrived at a condition of equilibrium, the drug was administered, in small doses at first, which were afterwards gradually increased. In private practice the results are not so conclusive, and the difficulties to be surmounted are often considerable.

Reference is first made to one of the cases recorded in last year's paper, Mrs. W., who had an attack of severe influenza, during which time the drug had to be suspended. The percentage of sugar, which had been almost nothing, rose during the influenza to between four and five, subsequently falling back again to about four. She did not resume the drug, partly because she did not appreciate the difference between three and four per cent. of sugar and practically none, and because the disease had not been cured by the drug, and for another reason—because she thought the medicine upset her digestion from time to time. She is now passing about three or three and a half per cent. of sugar, but in other respects is fairly well.

Among the new cases to be recorded in the present year, there are none which present such striking features as those which were published last year; still, several show the same general improvement, though not in the same degree.

Case 1 was an instance of acute diabetes in a woman of twenty-two years. On admission she was passing ten pints of urine and giving eight per cent. of sugar. After being dieted for three weeks in the hospital the amount of urine was reduced to four pints and the percentage of sugar from eight to six; but during all this time there were great fluctuations in the amount of urine and in the percentage of sugar, such as are usually seen in bad cases of diabetes. After being placed upon uranium nitrate, the doses being gradually increased to five grains three times a day, the percentage of sugar was reduced to four, the patient was greatly improved and gained ten pounds in weight, and the irregular fluctuations above referred to entirely disappeared. On leaving the hospital a short time afterwards the percentage was three and a half and the quantity of urine three and a half pints. She went home to the anxieties and work involved in the care of a family of small children, was unable to continue the dieting, and I believe died not long after.

The second case, a woman of forty-four, was passing seven pints of urine and seven per cent. of sugar, with considerable fluctuations between a maximum of 8.3 per cent. and a minimum of 6.5. After being dieted in the usual way, the percentage fell to 6.8, and then uranium nitrate was given, with the result that the percentage fell to 4.6. She greatly improved in the hospital, and continued to take the drug some time after she left.

The third case was that of a young man aged twenty-five, a case of acute diabetes of short duration. He was passing, on admission, seven pints of urine, with a percentage of between six and seven of sugar. Ordinary diet produced but little effect upon the quantity of urine and not much upon the percentage of sugar. Under the influence of the drug the percentage fell from six to between three and four. Ten grains of the drug were taken three times a day without any inconvenience, the appetite remaining good, and the weight increasing. Towards the end of his time he was allowed to have four to six

* Abstract of a paper read at the annual meeting of the British Medical Association, at Carlisle, July 27-31, 1896.

ounces of bread or toast. The drug was continued, but under this diet the percentage rose only to four and a half—that is to say, not as much as might have been expected. He has been taking the drug now for a long time as an out-patient, is considerably heavier than when he was in the hospital, and is able to do his work well; and although under irregular conditions of diet the percentage of sugar is heavier, still he believes the drug is a necessity to him, and he is much better and abler for his work while taking it.

The fourth case was that of a man aged fifty—a bad case of only six months' duration. The urine was about five pints, with six per cent. of sugar. He was dieted as strictly as possible, but we could not get him to do without bread. The uranium was increased up to ten grains three times a day, which he took without any inconvenience, and he gained several pounds in weight. Under the combined action of the drug and diet the quantity of urine was reduced about a pint, the specific gravity remaining much the same, and the percentage fell rather more than one. The most marked feature about this case was that the irregular fluctuations, which had been so marked soon after his admission into the hospital, entirely disappeared, and the quantity of urine and sugar became fairly constant.

The last case was that of a private patient, aged forty-one, who had been the subject of diabetes for about four years. In this case, I regret to say, the drug did not prove a success. He was never able to take more than about three grains three times a day, and while taking the drug the lowest percentage of sugar reached was 2.3. As long as he was under my observation the percentage averaged about three before he began to take the drug. Before he came under my observation the analyses had been made very irregularly, but it was stated that the percentage had on occasions been lower than this and that on some days sugar had been entirely absent. These statements, however, I cannot vouch for. The drug, in the doses given, seemed really to have little or no effect, and, as the digestion became somewhat disturbed, it had to be ultimately suspended. The failure of the drug in this case may be attributed, I think, in some degree to the idiosyncrasy of the patient, who was unable to take any but very small doses, and even those for only a brief period.

The general conclusions that may be drawn from these additional cases are the same as those I expressed last year, viz.: that we have in uranium nitrate a drug of considerable value in the treatment of diabetes mellitus, though, like all other drugs, it cannot be relied upon to produce equally good results in all cases indiscriminately.

---

*THE PATHOLOGY OF ITCHING, AND ITS TREATMENT BY LARGE DOSES OF CALCIUM CHLORIDE.**

By Thomas D. Savill, M.D. Lond.,
Clinical Assistant to the Blackfriars Hospital for Diseases of the Skin; Physician to the West End Hospital for Diseases of the Nervous System; etc.

Dr. T. D. Savill gave an extempore synopsis of his contribution on "The Pathology of Itching, and its Treatment by Large Doses of Calcium Chloride, with Illustrative Cases." After referring to the troublesome nature of the sensation and the many different forms it may assume, the apparatus concerned were described. It was shown that the symptom of itching was an evidence of an irritation of the sensory nerve-endings, or of the nerve-fibrils in the skin. Etiologically considered, itching might be classified into primary and secondary pruritus. The latter corresponds to the pruritus which attends and is secondary to the great majority of eruptions, and is characterized by being more or less localized to the causal skin lesion. It is explained by the involvement of the nerve-endings, and the sensory nerve-fibrils in the skin, in the lesion which produces the eruption. It is also proportionate in severity to the intensity of that lesion. The reason that itching is absent in some strumous and syphilitic eruptions is explained, the author thinks, either by their being suppurative and therefore destroying the sensory terminations, or by the nerve structures adapting themselves by reason of the indolent or chronic nature of the inflammation.

Illustrations of primary pruritus are found in the itching of jaundice, diabetes, in pruritus senilis, and in all skin conditions where skin-itching is the primary and often the sole local feature of the case. The author also believes that lichen urticatus and prurigo come under this heading; they are characterized by a tendency to become general or diffuse and by the eruption, if there be any, coming out either simultaneously or subsequent to the pruritus, never before. The various hy-

*Abstract of a paper read in the Section of Medicine at the annual meeting of the British Medical Association, July 27–31, 1896.

potheses that have been suggested in explanation were then discussed, and the conclusion was arrived at that it is a blood change which is the real casual factor of the nerve irritation in primary pruritus, on the following grounds:

1. The nerve-endings and fibrils are always bathed in lymph.

2. Primary pruritus is always diffuse; any localization can generally be accounted for by scratching or rubbing of the clothes, as across the shoulders.

3. It has a tendency to be periodic and paroxysmal, and, in diurnal attacks, to occur after meals.

4. It is often produced and aggravated by certain dietetic articles, some of which are known to contain blood-poisons, and the action of all of these is difficult of explanation unless it be assumed that they act through the blood.

5. In the pruritus of jaundice, diabetes, gout, etc., a blood alteration is known to exist, and in all of them the conditions for a blood change can, by inquiry, be revealed.

6. Certain drugs, notably morphine, hypodermically injected in large doses directly into the lymph, produce general pruritus.

7. The typical eruption secondary to pruritus, namely prurigo, always has approximately the same characters, and this eruption resembles in its elements those produced by drugs and blood-poisons.

8. The remedies hitherto found most efficacious in primary pruritus are those which have a sedative effect on the nerves, or else a direct effect on the blood; *e. g.*, the carbolic acid suggested by Hebra.

9. Calcium chloride, which suggested itself to the author on the foregoing grounds, has been proved to have a marked action on the blood by increasing its coagulability.

As regards *the nature* of the blood change, it is difficult to arrive at a conclusion in the present state of our knowledge.

The author gives seven illustrative cases, and remarks in conclusion:

As to the efficacy of calcium chloride in relieving the itching, the patients themselves —who are in these circumstances the best judges—have no doubt whatever, and are loud in their expressions of gratitude. The cases reported are selected as illustrations because they were less complicated, and because the pruritus was in all of them a most pronounced symptom. In all of these cases the itching was relieved, and the eruption, if any existed, disappeared at the same time. I have not so far met with any absolute failures, though sometimes the dose has to be considerable and continued for several weeks, especially in long-standing cases. In Cases 3, 4, 6, and 7, a cessation of the remedy was attended by a return of the symptoms, which disappeared again on its resumption, all the surrounding conditions remaining the same all the while. This, which corresponds to Mill's double method of agreement and difference, is the best kind of evidence obtainable as to the efficacy of any drug. This was particularly noticeable in Case 6, where it occurred on two occasions.

Four of these cases are of special interest because other remedies had been previously tried and had failed to give relief either for the eruption or for the itching: thus, in Case 3, warm tar-baths, ointment, arsenic, and bromide of ammonium; in Case 4, tar-baths, and a mercury-and-tar ointment; in Case 6, sulphate of quinine in large doses; in Case 7, arsenic, sulphate of quinine, tar-baths and lotion, over a long period of time, had all been tried without producing any evident amelioration. In several of these cases, though I have no records showing which ones, a regulation of the dietary had also been adopted, but until the calcium chloride was administered no benefit had ensued. The opportunity of trying the remedy in children for the itching that accompanies urticaria has not presented itself, but there is every reason to believe it would be equally efficacious in them also.

Mode of Administration.—The doses must be considerable, not less than twenty grains three times a day, and should be gradually increased; thirty and even forty grains have often succeeded where less had failed; the Pharmacopœia dose is fifteen to twenty grains. If administered after meals and in a wineglass of water, it is surprising how little these small doses upset the stomach; and I have never known vomiting to be produced. Patients sometimes complain that it makes them thirsty; and to cover the salt taste it is best administered with a drachm of tincture of orange-peel and one ounce of chloroform-water, in which form it is really an agreeable medicine and would be well taken by children. It is important that the diet, at the same time, should be regulated; no beer, sugar or sweets being allowed, and meat only in very moderate quantity. The recovery of Cases 3 and 6 was certainly retarded by neglecting this. It is also important to keep the bowels acting freely. This was evident in Case 1. Although improve-

ment is generally noted after the first dose, complete recovery is sometimes not obtained until the blood becomes saturated with the remedy, and the dose must be increased until this is accomplished; in long-standing cases, perseverance is necessary—for example, in Case 6. Success may follow doubling the dose if twenty grains does not succeed. The remedy seems to take longer to act in old people and inveterate cases—Case 7 for example, though Case 2 yielded more readily. When recovery is obtained the dose should be gradually, not suddenly, reduced; and it is very important that the remedy should be continued for at least one to three weeks after all symptoms have disappeared.

It is not possible yet to indicate precisely which cases are most suitable for this treatment, but it is worth while trying in all cases where itching is a pronounced feature; and if this small contribution shall be the means of affording relief in this troublesome condition, my object will have been achieved. In most of the cases an actual cure has resulted, but in a few of very long duration, including Case 7, relief was obtained only so long as the drug was being taken. Nevertheless, cure will probably result with perseverance, even in these.

THE TREATMENT OF PHLEBITIS.

We are told by the *Journal des Praticiens* of May 2, 1896, that the particular indications in the treatment of this condition are, first, to relieve the pain, which as an initial symptom is often severe; second, to prevent as far as possible embolic accidents which will gravely complicate the case; third, to produce absolute rest of the part affected as long as the phlebitis lasts. Pain and swelling usually appear about the same time, and in the leg, where the trouble most commonly arises, it will frequently be found that the obstruction exists in the hypogastric or in the common iliac vein. At first, care should be taken that the swelling be not thought to be a rheumatism or a neuralgia, as the paroxysmal character is apt to mislead one. For the amelioration of the pain it is best to wrap the part in a soft dressing surrounded by a gum cloth and to have the limb somewhat raised in order to facilitate the return of blood from it to the trunk. Any compression will make the pain much worse. In some instances large poultices composed of linseed meal, if applied to the limb, do good. In other instances the following prescriptions may be used as applications to the parts affected:

℞ Extract of belladonna, 3ɛ grains;
Extract of hyoscyamus, 30 grains;
Benzoated lard, 1 ounce.

Or,

℞ Chloroform, 2 drachms;
Camphor liniment, 2 drachms;
Glycerin, 4 drachms.

Or,

℞ Ichthyol, 15 grains;
Lanolin, 1 ounce.

If the pain is very much localized, the application of the ice-bag to the part may give relief, but it should be remembered that this application in the dressings of a poultice may favor the development of cutaneous gangrene.

Hypodermic injections of morphine are not to be resorted to if they can be avoided, as such patients are generally feeble.

The prophylactic treatment of this condition consists in absolute repose. Should the functional loss of power persist in the limb, a tight flannel binder should be applied about it. Massage in moderation should be employed, and faradization should be applied to the muscles. A visit to thermal springs is also of value in these cases during convalescence.

SARCOMA OF THE KIDNEY.

Nephrectomy offers the only hope of saving the life of children suffering from renal sarcoma. The immediate results of this operation have vastly improved during the past ten years. In 1885 Gross gave the mortality as fifty-six per cent.; Fisher in 1889 stated it as forty-eight per cent.; while Lewis in sixty cases has found it to be twenty-eight per cent.

Ultimate results, however, are not as favorable. In a large proportion of those who recover from the operation fatal recurrence takes place. In Lewis's sixty cases no less than thirty-two are known to have died from recurring sarcoma, the result of many cases not being known. Three, however, have passed the three-year limit without a return. Although operation offers the only hope of saving life, and unquestionably has the power in many cases of prolonging it, in the present state of our knowledge the probability that a child suffering from renal sarcoma will live to adult life is extremely small.—*Archives of Pediatrics*, May, 1896.

The Therapeutic Gazette

EDITED BY
H. A. HARE, M.D.,
GENERAL THERAPEUTICS,
AND
EDWARD MARTIN, M.D.,
SURGICAL AND GENITO-URINARY THERAPEUTICS.

SUBSCRIPTION RATES FOR 1896.
(PAYABLE IN ADVANCE.)

THERAPEUTIC GAZETTE (*postage included*).....$2.00
THERAPEUTIC GAZETTE with MEDICAL AGE..... 2.50
THERAPEUTIC GAZETTE with BULLETIN OF PHARMACY..... 2.50
THERAPEUTIC GAZETTE with MEDICINE..... 3.25
THERAPEUTIC GAZETTE with AGE and MEDICINE 4.00

Foreign subscriptions may be ordered either through our European branch, 21 North Audley Street, Grosvenor Square, London, W.; or through our agent in England, Mr. H. K. Lewis, Medical Publisher and Bookseller, 136 Gower Street, London, W. C. Price, 10s. Remittances may be made either by Postal Order or Stamps.

Price to Foreign Subscribers direct (postage included), $2.50 (10 shillings). English postage-stamps received on remittances.

Editorial communications should be addressed 222 South Fifteenth Street, Philadelphia. Articles intended for the Original Department of the GAZETTE will be accepted only with the understanding that they are contributed to it exclusively.

Authors will receive reprints in pamphlet form, without charge, provided the request for them be written on the articles sent.

Business communications should be addressed to

GEO. S. DAVIS, Publisher,
Box 470. DETROIT, MICH.

Leading Articles.

ON THE VALUE OF PEPTONIZED FOOD.

At this season of the year the physician with a general practice is called upon to treat many cases of gastro-intestinal disorder in both adults and children, and he is very apt to resort to the various preparations derived from the pancreas with the object of peptonizing milk or other nitrogenous food which he may prescribe for his patient. In many instances the use of the extract of the pancreas for this purpose is followed by the most beneficial results, and it cannot be denied that the introduction of peptonized food into the diet list of the sick was a distinct advance in hygiene and therapeutics. In certain cases where patients seem utterly unable for a time to digest and assimilate food, the administration of pancreatized milk or eggs by the mouth or by the rectum undoubtedly often saves life. On the other hand, as with every good thing in therapeutics, we must not forget that these peptonizing liquids, powders and other preparations should not be used for an indefinite time in any case, and that their value is greatest rather in acute than in chronic illness. It is a great temptation to the physician, the parents, and the nurse, when a child has just recovered from a severe attack of gastro-intestinal indigestion, which has been largely set aside by the use of pancreatin, to continue to use predigested food. But this is a temptation which must be resisted and the child be gotten back to a diet of undigested food as rapidly as possible, in order that the normal digestive function may be called into play. We are apt to lose sight in practice, because of the good results we frequently obtain with pancreatic extracts, of the facts which have been accumulated by various scientific and clinical observers with regard to this point.

On the one hand we have the experiments of Polsz, who, using an artificial milk compound, in which the proteids were artificially digested, was enabled to make a puppy increase its weight and grow in the most extraordinary manner in the brief space of eighteen days, and those of Maly, who has reached practically identical results in the case of pigeons.

Other experimenters have confirmed these results, and notable among them is Sir William Roberts of England, who has done so much in regard to the popularizing of peptonized foods and who has, on the other hand, with his usual clear perception, recognized the fact that there are limitations to their use. With the object of determining the exact effect of the use of pancreatized foods, he undertook a series of experiments to decide two questions: First, is artificially digested or peptonized milk alone sufficient to sustain nutrition? Second, is it as efficient in this respect as natural milk? He took four kittens of the same brood, eight weeks old, having found that kittens of this age thrive perfectly on an exclusively milk diet. Two of the kittens were fed on natural milk, and two on milk previously digested by pancreatic extract, care being taken that the digested milk was thoroughly peptonized. The experiment was continued for a period of twenty days, and the quantity consumed by each pair of kittens was as nearly as possible identical. All four remained in perfect health and took their nutriment greedily. As a result of this experiment, however, it was found that the kittens which took pancreatized food throve no better than those which took the non-pancreatized, seemingly proving that natural and pancreatized milk were equally nutritious.

The next experiment consisted in giving normal milk to two of the kittens, and only pancreatizing to a slight extent the milk for the two kittens which had received thoroughly peptonized milk from the first. As a result it was found that the kittens receiving peptonized food did not thrive as well as those which received natural food; proving, to the mind of Sir William Roberts, that the use of completely pancreatized food for a period of twenty days had produced such a condition of rest in the normal digestive apparatus of the kittens that when called upon to carry out the normal digestive processes their digestive organs were unequal to the task. He therefore concludes—and, we think, very properly—that, except in extreme cases where the digestive power is wholly lost or in complete abeyance, it is more advantageous to use food which has been subjected to only partial artificial digestion than to use that in which the process has been carried out to completion, for if the patient possesses any digestive power at all it is better that that power should be kept in exercise than allowed to deteriorate from total disuse. Further, it is not advisable in most cases to continue the pancreatizing of food for any greater period than is absolutely necessary for the maintenance of the nutrition of the patient.

THE TREATMENT OF AORTIC ANEURISM BY ELECTROLYSIS.

We wish to call the attention of the readers of the THERAPEUTIC GAZETTE to a very remarkable case of aneurism which was treated by electrolysis by Dr. Hershey, of Colorado, who reports his method in this issue of the GAZETTE. This case is of particular interest, not only because of its own peculiarities, but also because of the rarity of the operation as recorded in medical literature, and the fact that in the August number of the *American Journal of the Medical Sciences* another and earlier case is reported by Dr. D. D. Stewart, of Philadelphia, illustrations of which case, taken three years after the operation, are attached to this editorial note, the patient having entered the ward of the writer thirty-five months after electrolysis had been done by Dr. Stewart.

As will be noted in Dr. Hershey's paper, the successes which have been attained by this means of treatment are not as great in number as we could desire, but they have been sufficiently frequent and life has been sufficiently prolonged in the successful cases to make the operation well worthy of consideration in this most dangerous and hopeless condition.

These illustrations are taken from a forthcoming volume on "Practical Diagnosis," by the courtesy of the publishers, Messrs. Lea Brothers & Company, of Philadelphia.

FIG. 1.—Case of aortic and innominate aneurism, with erosion of the clavicle and ribs. This case is of extraordinary interest because this picture was taken thirty-five months after Dr. D. D. Stewart had caused an arrest of the growth of the aneurism by electrolysis. The man finally entered the Jefferson Medical College Hospital because the subjective symptoms of aneurism were returning, and a spot of softening and pulsation was to be felt in the lower right-hand border and at the edge next the xiphoid cartilage. This same patient is seen laterally in Fig. 2.

FIG. 2.—Bulging of the chest-wall, with erosion of ribs, from aortic and innominate aneurism.

HAS THE INJECTION OF AIR BEEN RESPONSIBLE FOR DEATHS FOLLOWING THE USE OF ANTITOXIC SERUM?

The fact that a few scattered instances have been reported in which sudden death has followed the injection of the antitoxic serum of diphtheria, has called forth many hypothetical conjectures as to the reason for this serious accident. Among others it has been thought that death might have been produced, in some instances at least, by the accidental injection of air with the serum into a vein instead of into the subcutaneous tissues. This supposition naturally calls our attention to our personal experience concerning the influence exercised by air when it enters the blood-stream. For many years it was thought by surgeons, chiefly because the idea was passed on from author to author and from teacher to teacher, that the entrance of a very minute quantity of air into the veins was followed by the most distressing symptoms, and in many instances by death. The writer of this editorial distinctly recollects that while a medical student he was directed as a part of his teaching to see that in no instance did the smallest globule of air remain in the barrel of the hypodermic syringe before an injection was given, lest by the double accident of puncturing a vein and injecting the air the patient's life might be put in jeopardy.

Since that time a number of valuable studies have been made as to the influence of air introduced into a vein in one of the lower animals, the most notable of which was perhaps that of Dr. Nicholas Senn; shortly after the publication of Senn's paper, Hare gave the results of similar experiments upon dogs. The experiments very conclusively proved that minute quantities of air entering the circulation were by no means as death-dealing as was generally supposed. Indeed, the latter investigator found, at first by accident, and afterwards by direct experiment,* that very large quantities of air might be injected into the jugular vein of a dog without producing any symptoms whatever. Thus he repeatedly injected as much as twenty to forty cubic centimeters of air directly into this vein in such a way that it must have passed in bulk directly into the cardiac cavities. At the same time blood-pressure tracings of the action of the heart and circulation were taken. Later on he demonstrated these facts before the Philadelphia County Medical Society, injecting the air in these large quantities into the jugular veins of two dogs, weighing less than twenty pounds apiece, which were immediately set free and which ran about the room quite unaffected by the operation.

On the other hand it seems to be proved by some experimenters that certain animals are more susceptible to air embolism than are dogs. Thus it has been found that monkeys very frequently become seriously distressed if large quantities of air are introduced into their circulatory apparatus. We repeat, however, that all the scientific investigations with which we are acquainted prove that minute quantities of air entering the circulation are not to be considered as dangerous as has been taught.

Our attention has been more recently called to this subject, particularly in connection with the injection of antitoxic serum, by a paper by Drs. Seibert and Schwyzer, of New York, who conclude from experiments on guinea-pigs that the sudden deaths reported after antitoxin injection were caused by injected air and not by anti-diphtheritic serum. For obvious reasons we have read this paper with very great interest, and are forced to entirely disagree with the authors in their conclusions —first, because we do not think their experiments justify the conclusions which they reach; and second, because it is incredible that deaths should result so frequently, comparatively speaking, from the injection of air with serum, and so seldom from the injection of air with various other medicaments which are commonly employed in hypodermic medication.

First, in regard to their experiments. Using full-grown guinea-pigs, which nevertheless are very small animals, they injected as much as from two to four cubic centimeters of air into the jugular veins of these animals, thereby, as they well state, practically filling the cardiac cavities with air, to the displacement of the blood not only for one beat of the heart, but for a number of beats, since the heart of this small animal naturally contains but a very minute quantity of blood, even in its greatest diastole. In other words, the quantity of air which they injected into a guinea-pig would be equivalent to the injection of about four to six ounces of air into the jugular vein of a child weighing fifty pounds, a quantity which could not possibly be introduced in any syringe simultaneously with the injection of anti-diphtheritic serum. Their experiments, therefore, while proving

*See THERAPEUTIC GAZETTE for September, 1889.

that massive quantities of air injected into the jugular vein are fatal to guinea-pigs, in no way prove that minute quantities of air are fatal to these animals, or that minute quantities of air injected with anti-diphtheritic serum underneath the skin of a child can possibly produce the results which they claim for it.

The second objection—in regard to the possibility of the entrance of air into a vein simultaneously with the hypodermic injection—seems to us of considerable importance, for the occasions on which the hypodermic needle punctures a vein must be exceedingly rare in connection with anti-diphtheritic serum as compared with ordinary medicinal injections, for the serum is usually injected into a portion of the body devoid of large veins, while the medicinal substance is usually injected into the arm or leg, where the veins are numerous, large, superficial, and easily entered. So far as we know, there is no case on record in which death has occurred from the injection of a minute particle of air with morphine or any other drug during the practice of hypodermic medication. We think, therefore, that some other explanation of this grave sequel to the injection of anti-diphtheritic serum must be sought for than that which is offered by the authors quoted.

In this connection it may be well to call attention to the fact that the reported death of the little son of Dr. Langerhaus, of Berlin, following upon the injection of antitoxic serum, has been explained by the fact that the child had just completed an unusually heavy meal, and that in the attempt to vomit during the faintness following the antitoxin injection, he drew into his air-passages some of the contents of his stomach, with resultant asphyxiation.

THE VALUE OF EXPERIMENTS UPON ANIMALS TO MODERN MEDICINE.

In the editorial columns and elsewhere in the THERAPEUTIC GAZETTE for June, 1896, we called attention to a bill known as Senate Bill 1552, which on its surface was apparently designed to prevent cruelty to animals in the District of Columbia by ignorant persons, but in reality was intended as a blow against what has been popularly, but erroneously, called "vivisection" in that District and in other States and Territories in the Union. If this law passes in the National Congress it will be a precedent in the hands of enthusiastic but misguided agitators elsewhere.

It seems hardly necessary to address so intelligent an audience as the readers of the THERAPEUTIC GAZETTE upon the value of the work which it will be impossible to carry out should this bill become a law. While there may be some members of the profession who consider that many original investigators in the fields of bacteriology and infectious disease are unduly enthusiastic and inclined to place too great weight upon the results of their studies, no one can deny that the general trend of experimentation in the last twenty years has been for the great advancement of scientific medicine and therapeutics. To those who are particularly interested in this subject we wish to cordially recommend an exceedingly able address delivered as the annual discourse before the Massachusetts Medical Society at its one hundred and fifteenth anniversary, in June, 1896, by Dr. Henry P. Bowditch, Professor of Physiology in the Harvard Medical School—a gentleman whose scientific and intellectual training, both in this country and abroad, combined with his judicial frame of mind, renders him capable of presenting facts for and against vivisection in a manner which must command the respect even of those who are opposed to him.

After discussing the efforts which have been made in Massachusetts and elsewhere to prevent what has been called "vivisection" in that State, he first points out that no greater error exists than to suppose that the medical profession, which is noteworthy for its humanitarian principles and tenderness to the sick, would look with favoring eyes upon any individuals who could be thought guilty of inflicting unnecessary pain upon any of the lower animals; and yet it is the medical profession which practically universally supports and encourages within proper limits the use of the lower animals for the study of infectious and other diseases.

On the contrary it may be shown that those who are most active in the so-called antivivisectionist cause apparently lose sight of all humanitarian principles, and Dr. Bowditch quotes no less an enthusiast than the late Henry Bergh, who in a public lecture made the following statement concerning Dr. Robert McDonald, who saved a dying person by the transfusion of animal blood: "In other words, this potentate has discovered the means of thwarting the decrees of Providence where a person was dying, and snatching

away from its Maker a soul which he had called away from earth." We greatly fear that the entire medical profession, on this principle, are guilty many times a day of committing a crime against the will of the Almighty—a crime, by the way, which most of the human race also seem bent upon committing—and we venture to state that when Mr. Bergh was in the position of which he speaks he and his friends opposed this will of the Almighty with never-ceasing constancy.

As an instance of what enthusiastic but misdirected effort in the protection of animals from cruelty may bring about, it is a fact to-day that in England, where the anti-vivisection crusade has been most successful, it is penal to use domestic animals in any way cruelly, but one may torture wild animals in whatever manner he desires, *provided it is not for scientific purposes.* Thus the trained medical scientist can only make experiments upon living animals, even if they be under the influence of anesthetics, provided he has a permit issued by the English Government; but any English sportsman can chase comparatively tame deer, or other semi-wild animals, with dogs and on horseback until they die from fright or exhaustion or from the wounds inflicted by the rifle or by the attacks of the hounds. Any kind of bird may be shot, and no law requires that the gunner see to it that the animal is actually killed—and for every instance in which a bird is killed directly there must be many instances in which it escapes to some hiding-place, where it dies a slow death of torture either directly from its wounds or as the result of exposure to its enemies. In nearly every instance this pursuit is resorted to for sport alone, with no other benefit to mankind than that which is derived by the individual from spending a number of hours in the fresh air in healthy exercise; whereas the benefits which result in reducing the sum of suffering to the entire human race are curtailed by law.

Dr. Bowditch cites an instance in which two methods of deciding upon the healthfulness of a certain impure water-supply to the inhabitants of cities were carried out. One experiment was made by the water company which supplied a large metropolis with infected water, with the result that a very great number of persons fell ill and many hundreds of deaths occurred, thereby proving scientifically that infected water could produce a certain form of disease and death. At the same time, by the use of fourteen mice, a scientific investigator proved precisely the same facts. Yet under the law the water company was free to make its experiment, and the scientific investigator could only use the fourteen mice under strict limitations and supervision.

Even supposing that pain is suffered by the animals upon which experiments are made, is it not far better that many animals should suffer moderate pain than that one human being should suffer great pain and perhaps lose his life?

The value of the work of the Bureau of Animal Industry in the Department of Agriculture in regard to the study of Texas fever and other infectious fevers in cattle and other domestic animals is not only of value to human medicine by giving us a general insight into pathological processes, but has already saved hundreds of thousands of dollars to stock-raisers and others whose industries are crippled by our ignorance of disease in the lower animals. Is it not better that a few animals should be sacrificed in Washington under the direction of skilled and trained scientists than that thousands should be sacrificed in the great pastures of the West, year after year, through our ignorance of the cause of their suffering?

In the editorial referred to we urged our readers to write at once to their Representatives and Senators, urging them to see to it that this bill was defeated in both Houses of Congress; and as the bill will come up for action at the next meeting of Congress, in the early winter, we appeal to our readers a second time to be energetic in their efforts to cause its defeat.

THE OBJECTS AND LIMITS OF OPERATION FOR CANCER.

On this highly important topic Watson Cheyne contributes an article characterized by his usual sound knowledge of pathology and practical common sense. He points out that it is always serviceable to review the present status of medical science in some particular department and to criticise the advances that have been made, for the purpose of determining which of these advances are good and which are of doubtful value, thus furnishing a basis for further work. By the term "cancer" he implies carcinoma, and this he holds is essentially a local disease, hence theoretically curable provided it is possible to remove all the offshoots with

the primary nodule. Clinical evidence bears out this view, since in the majority of cases recurrence *in loco* takes place within a year, thus strongly suggesting that the original operation was not sufficiently extensive.

Recurrence after three years is so rare that a patient who survives for this length of time is commonly looked upon as cured. Cases are, however, sometimes met with in which late recurrences take place in parts where the cells must have remained dormant from the time of the previous operation. In support of this view, Cheyne quotes a case of Lister's, operated on fifteen years ago for cancer of the breast, a few small, hard glands in the axilla being left untouched. These nodules remained unchanged until very recently, when they formed distinct tumors and were removed; on examination they proved to be carcinomatous. Kocher reports two cases of cancer of the tongue in which the disease reappeared ten or twelve years after operation; but here the question of fresh development arises. Gross holds that of all recurrences after breast operations, not more than 2.3 per cent. take place after three years; Koenig, however, places this estimate as high as 15 per cent. In cases of intestinal cancer, late recurrences are by no means rare.

The prognosis of cancer in parts where it is in the first instance superficial, hence early observed, and where there is plenty of room for cutting wide of it, is extremely favorable: Vollmann states that in cancer of the extremities 51 per cent. are cured.

The least favorable of the face cancers is that of the lip, probably because the muscle is soon attacked. Even here the results show the curability of the disease, Wörner reporting 106 successful cases out of 223. Taking the results of a large number of surgeons, 28.1 per cent. of the cases of cancer of the lip are well three years after operation.

The uterine cancer is also distinctly curable. Thus, Martin states that as a result of total extirpation of the uterus for all forms of malignant disease, 45.7 per cent. remained well after three years.

The primary object of operation in cancer is the prolongation of the patient's life and alleviation of his suffering. These results are best attained by aiming at the cure of the disease. The first question to be considered in investigating a case of cancer is as to whether there is any possibility of curing it. Regarding the disease in this way, it is evidently necessary to remove not only the parts perceptibly affected, but also as far as possible the parts in which disease may have become disseminated although still unrecognizable: thus, if the skin is affected, a considerable portion of the neighboring tissue must be taken away. This is the more necessary where the infection has come from beneath, as, for example, where cancers of the breast reach the surface, for the dissemination in the cutaneous lymphatic plexus is often, under these circumstances, very rapid and extensive, probably due in part to the large size of the deep cutaneous plexus, which will, in the latter case, be first involved. Again, where muscles are infected the cancer cells are very early and rapidly driven along the lymphatic vessels of the muscle, and, even though there may be only one visible nodule, the whole or greater part of the muscle must be looked upon as suspicious and must be removed if there is to be anything like certainty in attaining the object of the operation. The lymphatic glands become infected early, without visible enlargement in the first place. In addition to this infection of the glands without enlargement, plugs of cancer cells very often stick in the lymphatic vessels on their way to the glands. Hence it is necessary in all cases where the disease has lasted any time or extended at all deeply, not only to remove the primary mass freely, but also to take away the whole lymphatic area up to and including the nearest lymphatic glands. Consequently, surgical intervention becomes a much more serious matter than simply an effort to get rid of the main trouble for a time and prolong the patient's life.

The first question to be considered is as to the anatomical possibility of removing all the local disease in the probably infected area. If this is possible, the next questions are: What are the chances of death as the result of the operation? and, What will be the subsequent functional result? In deciding for or against operation it must be borne in mind that the disease if untreated is inevitably fatal and often occasions great suffering.

In operations for removal of cancer of the breast, local return must be looked upon as the fault of the surgeon in not taking away enough tissue to remove all the previously existing disease. No doubt in many cases this is a fault which is quite unavoidable, owing to the excessive and undiscoverable dissemination of the disease. Recent researches have shown that the breast is a much more extensive organ than was formerly sup-

posed. Lobules run in the fat over the pectoral muscle, nearly up to the clavicle, well into the axillary line, almost on to the sternum, and downwards to the origin of the abdominal muscles. In the deeper part also the lobules of the breast are intimately connected with the pectoral fascia, and the removal of the breast without simultaneous thorough removal of the pectoral fascia inevitably means that numerous lobules are left behind. Hence the skin incision must be free, and indeed all the skin overlying the prominent part of the organ should be removed, since the suspensory ligament running between the skin and the breast contains lymphatic vessels which are frequently infected with cancer cells. In addition, the skin all around must be raised, leaving fat and lobules of the breast, as high as the clavicle, as far inwards as the middle of the sternum, downwards on to the abdominal muscles, and outwards on to the latissimus dorsi, which must be detached. In this way the primary disease, the breast, and the lymphatic vessels running in the fat and pectoral fascia towards the axilla, are separated; then the whole contents of the axilla can be cleared, finally leaving the nerves and vessels thoroughly clean as in an anatomical dissection. Then the axillary vein is explored in its lower part, its sheath being torn open through its whole length. On raising the pectoralis minor, the whole fat with its included glands and lymphatic vessels is taken away right up to the clavicle. It is important that the mass be removed in one piece, since otherwise tissues might be cut through which would lead to subsequent infection of the wound. This risk is not an imaginary one. If it can possibly be avoided, malignant tumor should not be cut into. On no account should it be removed piecemeal.

The leaving of a skin wound which can be approximated by suture is of minor importance, and when the surface is ulcerated from below there should be no hesitation in removing the skin very freely. When the tumor is adherent to the pectoral fascia, the whole thickness of the muscle should be removed. When the muscle itself is actually diseased, it should be removed in its entirety, or at least only the clavicular portion should be left. When the glands in the axilla are markedly enlarged, the question arises as to how far one should go. The pectoralis muscle can be cut across and the structures removed up to the clavicle. It has been held that when the axillary glands are enlarged the surgeon should go further and remove the glands of the posterior triangle of the neck. The first chain of glands opposes a barrier for a considerable time against the onward spread of the disease, and if it is thoroughly removed we may rest content. If the highest axillary glands are notably affected, the posterior triangle of the neck should be opened. Unfortunately, the line of infection does not so much run into the posterior triangle as along the subclavian vein into the thorax by a route which is only imperfectly accessible even when the posterior triangle is opened.

Mr. Arbuthnot Lane advocates division of the clavicle and clearing out the supra-clavicular glands in all cases, but with this treatment Cheyne does not agree, holding that when the disease is noticeable in these glands cure is hopeless. Partial amputation has been advocated, but when disease has progressed so far as to necessitate such a procedure there is no chance of curing the patient. The condition under which amputation of the arm would be necessary is the presence of a large mass in the axilla, involving the nerves, for involvement of a vein or an artery or even of both does not necessitate an operation. Cheyne has removed portions of the axillary vein to which glands were firmly adherent, and in one case removed both vein and artery without any loss of vitality or other trouble in the limb. He would exclude from operation: (1) cases of cancer *en cuirasse;* (2) cases where there is a large mass in the axilla involving the nerves; (3) cases where large glands can be felt above the clavicle; and (4) all cases where secondary cancers already exist elsewhere.

Cheyne reports twenty-one cases operated on since 1890, with no deaths since operation; twelve cured—that is, well after more than three years; and nine recurrences. This gives 57 per cent. as cured.

The second table includes those cases in which three years have not elapsed since operation, forty in all, of which 67.5 per cent. remained well and 25 per cent. recurred. While the results are steadily improving, the proportion of cases which succumb to cancer is still considerable, and will not be reduced until patients and medical men understand that there is a good chance of radical cure from early and thorough operation in mammary cancer, and that a suspicious lump in the breast, especially in elderly women, is a thing to be explored, since ninety per cent. of these swellings are cancerous.

Contrary to the usual dictum, the most favorable of all cases for operation are those of atrophic scirrhus, and the more nearly a cancer approaches the atrophic form the greater is the chance of permanent cure. In these extensive operations shock is the only risk which must be faced. In one case Cheyne observed the complication of pneumonia. There is comparatively little functional disability.

Cheyne next considers the question of cancer as it affects the mouth and throat, more especially the pharynx. Here the cancer is less accessible than in the breast. Its anatomically associated lymphatic glands are, however, much more readily reached, and metastatic deposits are infrequent. Cancer of the tongue very rapidly spreads to the muscles, and the rules already laid down would imply removal of the whole muscle and of the nearest lymphatic glands.

When the cancer appears as a superficial warty growth, the deeper muscles are not affected; the tongue is not saturated with cancer cells; hence, results of operation are favorable. It is safe to remove half of the tongue; nor need the muscles be followed quite down to the hyoid bone. In deep cancer the muscular fibres must be followed to their attachment. When the base of the tongue is affected, the cancer communicates with a large lymphatic plexus which is not unilateral, hence the glands are involved on both sides of the neck. This plexus runs into glands of the anterior triangle and about the angle of the jaw, and the lymphatic vessels seem to be specially connected with, or related to, the posterior belly of the digastric muscle. On the other hand, many of the lymphatic vessels at the anterior part of the tongue and the floor of the mouth run towards the submaxillary region, and it is there, and subsequently about the cornu of the hyoid bone, that the first enlargement of lymphatic glands is usually evident. When the disease is superficial and affects the front part of the tongue, the glands are not so early affected and it is not necessary to remove the glandular area in the first instance, but Cheyne advocates taking away the submaxillary and sublingual glands on the affected side along with the lymphatic glands so closely associated with them. Therefore it is advisable to tie the lingual artery in the neck and clear out these glands with the fat in the neighborhood, even though no nodules can be felt; the tongue is then clipped out of the mouth. The wound in the neck does not communicate with the mouth; it remains aseptic and does not add anything to the danger of the operation. When, however, the cancer extends deeply into the substance of the tongue, and especially when it is situated in the back part, some more severe procedure, such as Kocher's operation, with thorough removal of the glandular area and of the muscle down to the hyoid bone, becomes requisite. By improvement in the technique the mortality has been reduced to 3.5 per cent. Taking mild and severe cases together in the statistics of a large number of surgeons, the mortality may be estimated at from 15 to 20 per cent. Failure to cure is often due to not taking away enough of the tongue in the deep-seated cases, and more especially to failure in clearing out the glandular area properly. Kocher gives 18 per cent. of cures and 11 per cent. mortality. Cheyne gives the limits of the operation for cure of cancer of the tongue as follows: 1. Very extensive infiltration, especially toward the base. 2. Extensive involvement of the jaw. 3. Extension to the upper part of the pharynx and involvement of the carotid artery and pneumogastric nerve in a dense malignant infiltration.

Cancer of the pharynx commonly begins in the mucous membrane, over the tonsils or pillars of the fauces, spreading first upward to the soft palate, next on to the base of the tongue, and lastly back over the pharynx. Epithelioma also begins about the epiglottis and orifice of the larynx, and the third point of selection is close to or at the commencement of the esophagus. Sometimes the first symptom to attract attention is bleeding or a feeling of uneasiness or dryness about the throat, and very commonly pains shooting up to the ear, or enlargement of cervical glands. Patients rarely seek advice before the disease has spread to an alarming extent, when it is commonly regarded as hopeless. Nevertheless a considerable number of operations have been performed for cancer in this region.

The most popular method of gaining access to the tonsil is by an oblique incision (Von Langenbeck) in the anterior triangle, downward to the cornu of the hyoid bone. The cheek is then divided from the angle of the mouth obliquely downward and outward, the incision crossing the jaw just in front of the masseter muscle and joining the oblique incision in the neck. The jaw is divided in front of the masseter, and the parts are held aside, exposing the tonsillar region. A very important alteration in this method has been

made by Mikulicz: this consists in division of the ascending ramus of the jaw just above the angle, and the extirpation of the whole ramus. A third method is Von Langenbeck's subhyoid pharyngotomy, in which a transverse incision is made in front of the neck through the thyro-hyoid membrane close to the hyoid bone; the epiglottis being hooked aside, a good view of the interior can be obtained.

Preliminary tracheotomy should be avoided where possible. When the external carotid artery is ligated and the bleeding is consequently very slight, there is not much chance of blood entering the trachea, especially if the head is thrown well back. When an attempt is made to remove the tumor without division of the jaw or without ligature of the external carotid artery, and when the mass fills the throat, and more especially when it runs down to the entrance of the larynx and on to the tongue, preliminary tracheotomy is indicated. The mortality in the collected cases where tracheotomy was performed was twice that in which there was no tracheotomy. This was in the main due to septic pneumonia. In most of these fatal cases, however, the base of the tongue was involved, thus interfering with deglutition and encouraging accumulation of discharges about the orifice of the larynx. Under these circumstances Cheyne advises not only preliminary tracheotomy but also the continued use of Hahn's tubes for some days after operation, till the patient has regained the power of easy swallowing.

In the case in which the external carotid artery was tied, there was practically no bleeding at the time of operation. In most of the cases in which the external carotid artery has been tied, there has been severe and sometimes fatal secondary hemorrhage; hence Cheyne is inclined to give up this procedure unless the operation be performed in two stages, preferring to tie the branches of the vessel or control the bleeding by temporary compression of the artery during the removal of the tumor.

In these cases Cheyne holds that unless the glandular enlargements are very extensive or adherent to a variety of structures in the neck, and not merely to the sheaths of the vessels, their presence does not contra-indicate operation. Indeed, they offer the patient a better chance of cure, since when they are already enlarged it is much more easy to remove the whole glandular area in one mass than when none are to be felt; and, moreover, when the enlarged glands are felt in the anterior triangle, this renders it imperative to remove the neighboring lymphatic area, and especially that under the sterno-mastoid muscle, so that if glandular recurrence subsequently takes place it will in all probability be in the posterior triangle—that is, in a part which is easily accessible to future operation.

As to the operation after the preliminary tracheotomy when this is required: the next step is the exposure of the anterior triangle and the thorough separation of the fat and glands. Through the same wound the external carotid artery and its branches can be tied or controlled. For this part of the operation the best incision is one running along the anterior border of the sterno-mastoid muscle, from the mastoid process above down to the middle of the thyroid cartilage. The skin incision cannot be too free, since the sterno-mastoid must be lifted up and all fat and glands behind it must be removed. When adhesion to the sheath is at all extensive, it is well to tie the internal jugular vein in two places, divide it, and then peel it up along with the sheath and the mass of glands in front of it. With the aid of a curved blunt instrument all the fat and glands must be detached from underneath the sterno-mastoid muscle right up to the mastoid process and well into the posterior triangle, and this material peeled off so as to leave the muscles clear. This is most important, since recurrence frequently takes place here and is difficult to remove at a second operation. Removal of the jugular causes no inconvenience; indeed, Cheyne holds that it is an advantage, since it prevents septic thrombi from being carried into the general circulation. He advises the division of the operation into two stages, done on different days; this lessens shock and diminishes the danger of secondary bleeding in case the carotid artery is tied, since this vessel lying in an aseptic wound for some days becomes buried in new tissue. This division into stages has the disadvantage of possibly infecting the wound by divided lymphatics.

With regard to the question of dividing the jaw, Cheyne states that a marked increase in the space is obtained simply by dividing the posterior belly of the digastric and stylo-hyoid muscles. After this is done the jaw and the larynx can be pulled forward on that side to a very considerable degree. The growth must be removed by scissors or the knife, and should be taken away in one piece. The best safeguard against septic trouble is the avoidance of fresh infection at the time of

the operation, free drainage of the cavity, and possibly removal of the internal jugular vein.

As a preparation for these operations the teeth should be repeatedly and thoroughly scrubbed, and the patient should use a mild antiseptic gargle. Iodoform packing is employed for twenty-four hours to stop oozing, but is withdrawn the day after operation, and the mouth is frequently washed with weak antiseptic solutions. The wound must be drained through the most dependent part of the skin incision. The patient is propped up as soon as possible. In severe cases the patient is fed through the stomach-tube, one being left in at the time of operation for three or four days.

The list of cases reported shows but four cured. This cannot represent the proper percentage of cures, since many of the patients were lost sight of. With great care and guided by experience, Cheyne holds that we can look forward to a lessened mortality and distinct improvement as regards recurrence. The most unfavorable cases are those in which the disease has spread to the base of the tongue, the mortality here being 33 per cent.

Cancer of the rectum is characterized by the moderate degree of malignancy and the tendency toward late recurrence and metastasis. Cheyne holds that in a large proportion of cases the hope of benefit from a radical operation is so very slight that we can without hesitation exclude them from the radical procedure, and at the same time help them much by colotomy; and thus the cases in which the choice of an operation has to be left to the patient are comparatively few. In most instances after attempts at radical operation there has been incontinence, in some fistula; in many, stricture has resulted or fecal extravasation has occurred. The mortality of the radical operation is high, averaging about 8 per cent. for the perineal, about 18 to 20 per cent. for the sacral operation. The mortality of colotomy is practically *nil*.

Reports on Therapeutic Progress

THE STATISTICS OF ANESTHESIA.

The first Congress of the Scandinavian Society of Surgeons, held in Gothenburg in 1893, prescribed as one of its objects the collection of statistics of anesthesia by its members. Their researches have furnished the following results.

There are reported from March 1, 1894, to March 1, 1895, from Sweden, Norway, Denmark, and Finland, 15,052 anesthesias. Of these, 11,284 were with chloroform, 1279 with ether, 2122 with mixtures of chloroform and ether, 362 with ethyl bromide, and five with chloroform and ethyl bromide.

The administration of chloroform has been by drops, by large doses, with preparatory injections of morphine, without morphine, after the administration of cocaine by the mouth, and with preparatory introduction of cocaine by the nares. The difference observed between the administration of chloroform by drops and by large quantity was insignificant.

Morbid symptoms were observed during and after narcosis as noted.

Vomiting during the anesthesia occurred as follows:

	Per cent.
Ether, without injection of morphine	14
Ether, with injection of morphine	25
Ether and chloroform without morphine	13.5
Ether and chloroform with morphine	18.1
Chloroform by drops without morphine	10.5
Chloroform in large doses with morphine	14.8
Chloroform, with cocaine in the nares	13.6
Bromo ethyl	10.77

Asphyxia during narcosis was as follows:

	Per cent.
Chloroform, with cocaine by nares	3
Chloroform in large doses with morphine	1.7
Chloroform in large doses without morphine	1.3
Chloroform by drops without morphine	1.03
Chloroform and ether with morphine	18.1
Chloroform and ether without morphine	0.96
Ether without morphine	0.79

Syncope has been observed as follows:

	Per cent.
Ether without morphine	0.08
Ether and chloroform without morphine	0.58
Chloroform by drops without morphine	0.4
Chloroform in large doses without morphine	0.2

Asphyxia has been observed in 139 cases, syncope in fifty-two cases. There were five deaths during chloroform narcosis—one in 2257 cases.

Vomiting after narcosis was observed in the following proportions:

	Per cent.
Ether with morphine	25
Ether without morphine	24
Ether with morphine and atropine	8
Ether and chloroform without morphine	26.6
Ether and chloroform by drops, without morphine.	20
Chloroform by drops with morphine	6.15
Chloroform by drops with injection of cocaine in nares	42
Chloroform in large doses without morphine	57
Chloroform in large doses with morphine	40
Chloroform, with cocaine by mouth	2.6
Bromo ethyl	1.1

Jaundice followed chloroform narcosis in ten cases.

Somnolence was long continued in fifty-eight cases.

Albuminuria has been observed 128 times, but was not confined to either agent.

There were thirty-six cases of pulmonary affections after narcosis.

There were forty-three cases of feebleness of the heart and collapse after narcosis, as follows:

	Per cent.
Chloroform in large doses without morphine.....	.39
Chloroform by drops without morphine.....	.32
Chloroform and ether without morphine.....	.51
Ether without morphine.....	.15

Eighteen deaths following and to a certain extent attributable to the narcosis occurred as follows:

	Per cent.
Chloroform by drops with morphine, 2 cases.....	2
Chloroform by drops without morphine, 8 cases....	.08
Chloroform in large doses without morphine, 2 cases.	.18
Chloroform and ether without morphine, 4 cases ...	.25
Ether without morphine, 2 cases	.15

Hospital Physician Enydahl states that he has not had time to make a tabulated report. He is in favor of ether, and says that the reason why it sometimes does not work well is that the ether of the shops is not pure It must be absolutely pure. He uses Shiring's. He has administered ether (always without morphine) in at least 2000 cases, and has never had a death. He gives it always fasting, or after a cup of tea. Always drops it on a sponge in a napkin and brings it gradually and not smotheringly over the face. He has never had any serious complications of the respiratory organs. Sometimes, if the patient coughs badly, he changes to chloroform, after which the patient will take ether well, but he never prefaces ether with chloroform, as some patients will die at the very commencement of chloroform inhalation. He attributes his great success to the absolute purity of his ether.

He says that if, in using chloroform, the patient breathes very heavily, a change to ether will make the breathing lighter.—*Medical and Surgical Reporter*, April 18, 1896.

THE TREATMENT OF TYPHOID FEVER WITH TYPHOID THYMUS EXTRACT.

HENSHAW, of Cambridge, Mass., thus concludes a paper with this title in the *Boston Medical and Surgical Journal* of May 14, 1896:

Of these thirteen cases, the results in eight have been as satisfactory as could be expected; in four the course of the typhoid has not been materially shortened, and one death from hemorrhage occurred.

One case of typhoid fever was treated with injections of the plain sterilized thymus extract (without inoculation of typhoid bacilli, for control experiment). There was no appreciable change in the chart, or in the condition of the patient at any time. This shows that the presence of the typhoid organisms is essential to the success of this treatment.

In reporting such a small number of cases, comparatively, it would be quite absurd to draw any conclusions. The injections given have not been in any way injurious to the welfare of the patients, while, on the other hand, several of the cases have been materially benefited by this method of treatment.

If the writer's cases can be added to those previously reported, there would be a total of ninety-eight cases of typhoid fever treated with this extract. Where the treatment has been started reasonably early, there has not been a single death as yet recorded; he believes it is worthy of further trial, and after two or three hundred cases have been reported some positive conclusions can be reached. He suggests the use of a more concentrated and stronger extract, and, if possible, earlier and more persistent injections than could be given in the cases hitherto reported.

ARTIFICIAL FEEDING BY THE NOSE IN INFANTS.

In the *Journal des Praticiens* of May 2, 1896, SAINT-PHILIPPE of Bordeaux recommends this method in feeble or premature infants, or in those suffering from lesions of the mouth. He states that its technique is by no means difficult, the rubber tube being introduced through the nose and by this means a large quantity of liquid nourishment being passed into the stomach. The tube is passed into the back of the nose and down the throat rapidly in order to avoid irritation of the pharynx, which causes gagging or vomiting. He believes this method is useful, particularly where tracheotomy has been performed or where there is paralysis of the muscles of deglutition. The child is placed flat upon its back across the knees of the nurse, the head also being prone. Care should be taken, if the infant is very young, that too much liquid be not introduced into the stomach at one time, and also that the liquid be not too strong in nourishment. Carefully sterilized milk should be employed, or in the case of older children

broths should be used. The liquid should be carefully warmed before it is administered. This method has been long in use by physicians attached to establishments for the insane, and is of very great value in the treatment of this class of patients.

PRURITUS OF THE GENITALS.

HUNTER ROBB tells us, in a little brochure just received, that in treating a case of pruritus the main thing is to discover the cause. But even when this has been found, we are sometimes powerless to relieve the condition. Suppose that we find an endometritis with purulent leucorrhea, this should be at once attended to, since with its removal the pruritus may also disappear. If we have to deal with a neoplasm, with an acne, or more especially with cicatrices in the vulva, some cutting operation is more likely to bring relief than any other procedure.

Unfortunately, the patient hardly ever comes to us at the very beginning, and it is often impossible to be certain how much of the excoriation is due to the underlying cause, and how much to a dermatitis caused by the frantic efforts of the patient who has sought some, although only temporary, relief by scratching.

The removal of acne pustules covering the mucous membrane of the vestibule was followed, in several cases reported by Küstner, by the disappearance of the most obstinate pruritus.

Frederick and Wilshire hold that the disease generally has a parasitic origin, and would treat it with the various parasiticides.

When a woman comes to us complaining of pruritus, it may at first be allowable to give some one of the many washes so highly recommended for this condition, but as a rule the affection will not be cured in this way, and if the symptoms are not at once alleviated an examination should always be insisted upon.

We shall examine then (1) the external genitals for skin eruptions; in doing this, it will be well to obtain scrapings and examine them with the microscope for parasites. (2) We next examine the cervix for signs of leucorrhea and inform ourselves of the general condition of the uterus and appendages. (3) An examination should be made per rectum. And (4) the chemical and microscopical examination of the urine should never be omitted.

The presence of enlarged sebaceous glands or any signs of malignant disease should be carefully looked for. The urine, as we have said, should be examined—more particularly for albumin and sugar, and also microscopically. Hemorrhoids or fissures of the anus should be treated, and the vulva should be kept free from all irritating discharges. The general health of the patient should never be forgotten.

When the vulva is dry, too frequent bathing should be avoided and the surface should be kept moist, being treated not with evaporating lotions, but with ointments. Suppositories containing codeine or opium and hyoscyamus at night will often give the patient relief, since all the symptoms are aggravated when she gets warm in bed.

The name of the various external applications for pruritus is legion. You will find (and this is not an original remark) that whenever you have a long list of infallible remedies for any one morbid condition, some of them, or perhaps all of them, will disappoint you nine times out of ten, if not ninety-nine times out of a hundred.

Zweifel used to say in his lectures that nothing was any good except a two-per-cent. solution of nitrate of silver. This has sometimes disappointed the author. Ointments containing from two to ten per cent. of salicylic acid are sometimes effective. An application of a mixture of a drachm of chloroform to an ounce of olive oil will occasionally do some good, and sometimes none at all. A two-per-cent. solution of carbolic acid, the ordinary lead-and-opium lotion, or a solution of the acetate of morphine (two grains to the ounce), often gives relief for a time. But when the exciting cause cannot be removed, the treatment is of necessity empirical and too often unsatisfactory.

The most popular internal remedies are bromide of potassium, especially at night, and some form of belladonna, both of these drugs tending to decrease irritation of the peripheral nerves.

Some time ago Küstner and Schroeder began to try excision of the affected area, and in obstinate cases this has in their hands often proved successful.

Robb does not think that when we have tried everything else we should shrink from a cutting operation, because the bad effects of the disease upon the patient and the agony which she goes through justify the employment of heroic measures.

In his book, published in 1893, Küstner

gives only three instances of operative treatment, all of which, however, were ultimately successful. In the first case the patient had an endometritis, which was cured, without, however, any alleviation of the pruritus. Küstner then removed a portion of the mucous membrane, which was crowded with small retention cysts, and for three years afterwards at any rate the patient was free from pruritus, although she still suffered to a certain extent from endometritis. Another similar operation which he quotes was quite successful. In a third case in which the patient complained of pruritus, the vaginal portion of the cervix was found much enlarged. Küstner amputated it and found that the enlargement was due to retention cysts, there being no signs of carcinoma. After the operation, the pruritus continued to be as severe as before. A further examination brought to light an old defect of the perineum due to a previous labor. A perineorrhaphy was undertaken, the whitish part of the mucous membrane which had been the seat of irritation was removed, and the patient was cured.

ADHERENT PLACENTA.

In the *Intercolonial Medical Journal of Australasia*, March 20, 1896, NYULASY expresses the opinion that the only effective treatment of firmly adherent placenta is thorough curettement of the uterus. He contrasts this treatment with the recommendations of Barnes and Playfair. The former gives a true picture of the extreme difficulty and painful anxiety attendant on manual extraction, followed by the injection of iron in case of hemorrhage, and of antiseptics in case of septicemia. The latter says: "Such cases ('when it is found to be impossible to detach and remove the whole or greater part of the placenta') must be treated by antiseptic intrauterine injections, so as to lessen the risk of septic absorption as much as possible; but until the retained masses have been expelled, and the discharge has ceased, the patient must be considered to be in considerable danger." To show what likelihood of success this mode of treatment offers, he instances the case of the Duchess d'Orleans (in the time of Louis XIII.), who had an easy labor, but died of septicemia—"on the right side of the womb was found, post-mortem, a small portion of afterbirth, so firmly adherent that it could hardly be torn off with the finger nails." To attempt to treat these cases, where the uterus and placenta seem to be continuous parts of one organization, in any other way than the writer has indicated, is, in the light of present knowledge, mere tinkering, and subjects the woman to dreadful risks, the worst of which is the sudden development of that fulminating type of sepsis in which the patient rapidly passes from health to death. No matter how often the douche is used, it can only influence the germs that happen to be on the surface.

In regard to sapremia, Professor Parvin says the local treatment of applying antiseptics "promptly ends the disease;" in sapremia due to adherent placenta, however, Nyulasy finds such treatment utterly futile.

"It can readily be understood," Professor Playfair has recently observed, "that such a procedure (curetting) is more thorough and complete than intra-uterine injection, and there can be no objection to it in hands tolerably expert in obstetric manipulations. It must, however, be only practiced in exceptional cases and with great caution, since any roughness might seriously injure the uterine structures."

Professor Lusk, at a recent meeting of the British Medical Association, said that he was not in favor of curetting. Personally, however, he employs it in every case of adherent placenta, believing it to be the only safe and scientific principle of treatment, and he considers it successful in proportion to the promptitude and thoroughness of its application.

As examples of the value of this treatment, the author appends charts of two groups of recent cases—the first illustrating the success of early treatment, the second illustrative of other important points.

In the first group, the case A was a 4½-months abortion, with the placenta firmly adherent: the bulk of this was removed in two pieces, the remainder by thorough curetting; the patient bled a good deal during removal, but recovered in the usual time. Case B had a temperature of 103.2° on admission to hospital, and was delivered of a decomposing seven-months fetus, with very adherent placenta, which the resident surgeon was unable to completely remove; he curetted on the second day (temperature 102°); recovery about the usual time. Case C: Full-time child, but still-born; placenta and membranes reported "doubtful" on expulsion; curetted the third day on the first rise of temperature (103°); recovery in the usual time. Case D: Full-time; placenta and membranes reported

"complete;" sudden rigor and rise of temperature to 104.8° on the eighth day; small quantity of adherent placenta and membranes removed by curette; rapid recovery. The adhering parts were similar in each case—fibrinous, as described.

In the second group the placentæ were expelled by expression, and in Cases A and C were reported "complete," but in B "doubtful;" these cases were therefore not immediately curetted. They each developed purulent endometritis, but there was no fetor, and little or no tenderness in any case. They all recovered—one practically in a fortnight, the other two in three weeks. Case C was curetted on the fifth day, but on the ninth day developed purulent endometritis (with thick odorless pus welling out of uterus, and temperature 104°); the necrosing endometrium was at once removed by the curette, and the temperature fell a degree daily until it reached normal. A was curetted on the sixth, again on the eighth, and finally (for purulent endometritis, temperature 105° and rigor) on the seventeenth day. Case B was curetted on the eighth day, after a rigor and rise to 105°; again on the tenth, and finally (for purulent endometritis) on the seventeenth day. Both these cases fell to normal almost immediately after the final curetting. In all three cases the earlier curettings removed fibrinous matters.

In conclusion, the author replies to Professor Lusk's recent statement that curetting may be followed by a rigor and rise of temperature, that the alternative treatment of intra-uterine douching is occasionally followed by exactly the same results; and, as Krönig observes, in the treatment of purulent endometritis "clinical experience has taught us that washing out of the uterus brings no benefit."

THE USE OF CHLORATE OF SODIUM IN CASES MANIFESTING INTOLERANCE TO IODIDE OF POTASSIUM.

In a letter from Greece to the *Journal des Praticiens* of May 2, 1896, Dr. CALOMENOPOULO writes that in a case of absolute intolerance to the iodide of potassium occurring in an old syphilitic in whom the administration of either large or small doses developed restlessness, engorgement of the submaxillary glands, abundant salivation, and other symptoms of the excessive action of the iodide, he administered, at the same time with the iodide, ninety grains of chlorate of sodium each day. Under these circumstances—that is, when the two medicaments were given—his patient was able to take forty-five grains of the iodide of potassium without exhibiting any of the symptoms above named. The treatment lasted forty days. As soon as the administration of the chlorate of sodium was stopped or the dose diminished, the symptoms of iodism returned at once. The patient had already vainly tried not only iodide of potassium, but also iodide of sodium. The use of chlorate of sodium for this purpose was suggested by the very good results which had followed its use in the treatment of mercurial stomatitis. The Doctor therefore recommends the chlorate of sodium highly in the conditions of which he writes.

THE VAGINAL DOUCHE BEFORE LABOR.

The *Boston Medical and Surgical Journal* of May 14, 1896, speaks editorially as follows on this subject:

The question of puerperal self-infection, of the possibility of a puerperal sepsis taking place as the result of the presence of pathogenic bacteria in the normal or diseased vagina, and not introduced from without, is of great practical importance, and has recently been the subject of careful study in European clinics. As a result, the common routine practice of giving an ante-partum antiseptic douche has been discontinued by certain men of large experience, after careful consideration of its advantages and disadvantages. The question of self-infection practically limits itself to the vaginal secretion, as micro-organisms present in the tubes and ovaries are beyond the reach of the antiseptic procedures of the accoucheur.

Is the average parturient woman, then, liable to infection by bacteria present in the vagina? and if so, what preventive measures are to be taken? As pointed out by Jewett in an interesting article in the *American Gynecological and Obstetrical Journal*, the conflicting opinions have, in the main, been divided into three:

1. That the vaginal secretion may infect, whether healthy or diseased.

2. That only pathological secretions can infect.

3. That the vaginal bacteria, either in health or disease, have practically no part in the etiology of childbed fever.

Ahlfeld is an example of those who believe that pathogenic organisms are always present in the vagina, and that every lying-in woman

is liable to infect herself. Others have found pathogenic bacteria only in pathological secretions.

Döderlein, in 1892, as a result of observations on nearly two hundred cases in a Leipsic clinic, found that pathogenic bacteria did not live in healthy vaginal mucus, but that in diseased conditions there was liability to infection.

König, in 1895, published the conclusion, as a result of experiment at a Leipsic clinic, that the streptococcus is killed by healthy mucus within two or three days after its introduction into the vagina: clinically, the genital canal may be considered clean if from forty-eight to seventy-two hours have elapsed since the last examination. He is supported by other observers in the view that the vaginal secretion is not an important agent in puerperal infection.

Jewett (*loc. cit.*) has collected statistics of 23,467 cases from large maternity clinics in this country and in Germany, where the ante-partum antiseptic douche is a routine practice, and finds the mortality from sepsis to be one-tenth of one per cent. In the small number of non-douched cases (2764) the mortality is one-and-a-half tenths of one per cent., a difference too small to prove anything for auto-infection.

These figures, however, do not support the opponents of the douche in any claim that it is harmful, the mortality being too small. The most that they can indicate is that it is unnecessary. The fact that without the douche an equally low mortality has been obtained conclusively shows that the chief factor in the prevention of sepsis is the avoidance of contact infection.

More conclusive, as Jewett remarks, are the results of observations in parallel series of cases at the same clinic, such as those of Zweifel and Leopold. Zweifel found, in a large number of births, that better results were attained without vaginal douches than with them, and he considers the natural secretion a better protection against infection than any antiseptic. Leopold's statistics show that of 4584 cases treated at the Dresden clinic from April 1886 to April 1889, with the ante-partum douches, 80.7 per cent. were free from fever. From April 1889 to April 1893, when the douche was omitted, out of 4088 cases 92 per cent. were free from fever. The douche was omitted again in 1893; and from that time till June 1894, 1200 cases were treated, the percentage of fever-free cases falling to 85.

If we accept these figures, which come from a reliable source and are carefully collated, we must, as Jewett says, reject the routine douche as an unreliable and even injurious practice.

In his own practice Jewett has for several years used no ante-partum douche except for cause. In healthy cases, even where instruments or the hand have to be introduced into the uterus, if rigid disinfection of hands, instruments and external genitals is carried out, the ante-partum douche is unnecessary. Gonorrhea in childbed, acute or subacute, is generally followed by puerperal infection, and in these cases antiseptic measures are to be adopted.

The presence of a yellowish, greenish or fetid discharge is, however, an indication of the presence of virulent bacteria, and indicates prophylactic disinfection, not merely the perfunctory antiseptic douche, but a thorough scrubbing with soap and hot water, followed by antiseptic irrigation, as carefully performed as in ordinary surgical and gynecological practice. An asepsis should be aimed at which is no less strict than is practiced in major surgical procedures. When time permits, vicious secretions are to be corrected by a mild but prolonged antiseptic douche once daily or oftener, for several days previous to labor.

Dr. Jewett submits the following conclusions:

There is no clinical proof that puerperal infection can occur from normal vaginal secretions.

All childbed infection in women previously healthy is by contact.

Prophylactic vaginal disinfection as a routine measure is unnecessary, and even in skilled hands is probably injurious. Its general adoption in private practice could scarcely fail to be mischievous.

In healthy puerperæ, delivered aseptically, post-partum douching is also contra-indicated.

These rules must hold good in the simpler cases of manual or instrumental interference in which the uterus is not invaded.

A purulent vaginal secretion exposes the woman to puerperal infection. In the presence of such discharges at the beginning of labor the vagina should be rendered as nearly sterile as possible. Concentrated antiseptic solutions should not be used, and the process should be conducted with the least possible mechanical injury to the mucous surfaces.

In case of highly infectious secretions, the

preliminary disinfection should be followed by douching at intervals of two or three hours during the labor.

Sterilized glycerin, or other suitable material, may be used to restore the proper lubrication of the birth canal.

The safest and most efficient means for correcting vicious secretions is a mild antiseptic douche repeated once or more daily for several days during the last weeks of pregnancy.

It is the duty of the obstetrician to know before labor the amount and character of the vaginal discharge.

Clinically, the amount of the discharge, its gross appearance, and that of the mucous and adjacent cutaneous surfaces, usually furnish a sufficient guide to the treatment.

Probable unclean contact within twenty-four to forty-eight hours is an indication for prophylactic disinfection.

THE TREATMENT OF BOILS AND ANTHRAX BY MEANS OF METHYLENE BLUE.

TRENITE has recently recommended in a Russian journal the use of *ββ* methyl violet in the treatment of these conditions. He injects into the boil ten to fifteen minims of a solution of methyl violet in the proportion of 2 to 1000, and asserts that a few hours after this has been done the pain disappears, and that a cure is usually complete in about two days. He believes this treatment is also of value in cases of anthrax in which surgical intervention is refused or is impossible. Should a true carbuncle or anthrax be present, this author recommends that the necrotic area be slit open by means of a bistoury or tenotome and all necrotic matter removed before the injection is made. After the injection has been given, the cavity is packed with iodoform gauze which has been soaked in a solution of hot chloride of sodium.—*Journal des Praticiens.*

THE TREATMENT OF CHRONIC SUPPURATION OF THE MIDDLE EAR.

In the issue of *Pediatrics* of May 15, 1896, CHEATLE, of King's College Hospital, London, contributes an interesting paper upon this subject, in which he first points out how dangerous it is for the physician to let the parents of the patient believe that the discharge from the ear will cease as the child grows older. To treat the disease with success, it is necessary to thoroughly examine the ear, nose, naso-pharynx, and the general health; if pain or tenderness is complained of, the greatest care should be exercised in manipulating the ear and introducing the speculum. Owing to the shortness of the external auditory canal in children, a speculum is not always necessary in obtaining a view of the membrane. If pulsation is seen in the walls of the canal, a more or less acute inflammation must be present; and if any discharge is seen, the physician should endeavor to determine whether it is purulent, seropurulent, or muco-purulent—for the second indicates a healing process, and the last an acute or subacute condition. If, on the other hand, the discharge be blood-stained or brownish in color, there will probably be a polyp or granulations present, or progressive caries of the bones of the ear. The ear should be cleansed by means of a fountain syringe, and gently mopped. Cheatle states that perforation of Shrapnell's membrane usually denotes a tedious case and one which is difficult to treat, as it means that the trouble exists in the attic, in which are situated the heads of the larger ossicles.

Perforation in the posterior superior quadrant should arouse suspicion of caries of the incus. The object in examining the nose is to discover hypertrophic and atrophic conditions, or deviations of the septum or other abnormal states connected with the accessory sinuses.

In using the syringe, direct that the patient lie down with the affected ear turned toward the window with a good light; pull the auricle upward and backward to straighten the orifice and the meatus, with the fingers and thumb of the left hand, the nozzle of the syringe being placed just inside the dark orifice, and the stream directed gently but firmly straight forward, the syringing being continued until the fluid returns clear. It is hardly necessary to add that the solution must be pleasantly warm and that after it has been applied the ear should be carefully dried. Usually, syringing morning and night is quite sufficient to keep the ear clean. If suppuration is profuse, an antiseptic solution of carbolic acid 1:60, or of boric acid 1:80, will often bring about a cure. If granulations crop up, instillations of alcohol with boric-acid powder are useful. Thus the following formula may be employed:

℞ Powdered boric acid, 1 drachm;
Rectified spirit of wine, 3 ounces.

Ten drops of this are to be mixed with ten of

hot water and the pleasantly warm solution poured into the ear from a spoon and allowed to remain for ten minutes or over after syringing has removed all discharge. Should the instillation produce a stinging sensation, it should be syringed out and again introduced, and if the second instillation produces pain it must be weakened.

Politzerization, which clears the Eustachian tube and middle ear of discharge as well as improves the hearing, should be resorted to from time to time. In children, however, this method is not necessary in many cases. The application of small pieces of wool or cotton tightly packed into the meatus is to be avoided, as it prevents the proper escape of the discharge. If the discharge is profuse, it is better to put a large piece of cotton on the outside of the ear. Should the child suffer from adenoid vegetation, enlarged tonsils, or hypertrophic conditions of the nasal mucous membrane, these must all be removed. Atrophic conditions should be treated by proper stimulants to the nasal mucous membrane.

Finally, Cheatle asserts that the greatest care should be exercised in a patient suffering from chronic middle-ear trouble to avoid the entrance of water into the affected ear during washing. For the prevention of this, a firm plug of cotton wool should be introduced in the external auditory canal. Because of the danger accompanying the entrance of liquid in this manner, patients with a middle-ear discharge should not bathe in the sea or in a swimming-bath under any circumstances.

THE TREATMENT OF JOINT-TUBERCULOSIS BY INJECTIONS OF IODOFORM.

In the *Denver Medical Times* for May, 1896, FREEMAN expresses his views on this subject, and tells us that during the last few years surgeons have inclined more and more towards the adoption of conservative measures in the treatment of tuberculosis of joints; operations with many are becoming the exception rather than the rule. Complete rest, with muscular relaxation, whether obtained by splints, by extension, or by confinement to bed, must always remain of the greatest value; but there have been recent additions to the surgeon's resources, the importance of which should not be underestimated. The most prominent among them is the injection of iodoform in suspension into the diseased tissues, with the result of inhibiting the growth of the tubercle bacilli. Just how this inhibition is accomplished is still under discussion. Outside the body, iodoform has little or no effect upon the bacilli, and even in the tissues when sinuses are present the action is but slight. Krause explains this by supposing that the bacilli grow more luxuriantly in contact with oxygen. Others insist that the action of the drug is due to the slow and continuous liberation of small quantities of iodine. It is claimed, however, that it is to its effect upon the tissues, not the germs, that iodoform owes its efficacy, Stubenrauch affirming that "it hastens the destruction of unstable pathological elements and augments the resisting power of those which more nearly approach a healthy state."

Iodoform is best employed in a ten-per-cent. suspension in olive oil. There is little objection to the use of glycerin, but ethereal solutions are too irritating. Absolute surgical cleanliness should be observed, for, as is well known, tubercular tissues are susceptible to infection with ordinary pyogenic micro-organisms. The iodoform should be soaked for twenty-four hours in a 1:1000 solution of bichloride of mercury, which is stirred occasionally with a glass rod to make sure that the solution touches every particle of the powder. It is then filtered, employing a filter paper through which has been poured a quantity of boiling water. The remains of the bichloride are then washed away with sterilized water. The iodoform is removed from the filter with a surgically clean knife, and rubbed up with the oil in a sterilized mortar, about four per cent. going into solution and six per cent. remaining in suspension. The oil is best rendered germ-free by keeping it at the boiling-point for about half an hour. If the mixture is kept in a dark place in a sterilized bottle stopped with germ-free cotton, it will not deteriorate for a long time.

The injections should be made both into the joint-cavity and into the surrounding infected tissues. It is best to but partially withdraw the needle and insert it in a new place rather than to make a number of punctures in the skin. A general anesthetic is seldom necessary, although the procedure is not devoid of pain. If tubercular pus is present, it should first be withdrawn.

An ordinary hypodermic syringe, with a fair-sized needle, may be employed; but it must be absolutely clean within, and should never have been used for any purpose that might cause contamination. Filling the

syringe with boiling water a number of times accomplishes sterilization more effectually than the use of antiseptics. The needle should always be boiled.

The site of the puncture should of course be prepared as for any other minor surgical operation, although the risk of infection from the skin in these injections is not great.

One syringeful of a ten-per-cent. suspension of iodoform is an average dose, although more can often be used with impunity. It is well to begin with a moderate quantity and watch carefully for symptoms of iodoform poisoning—which, however, seldom appear.

In general, the injections can be repeated every two or three days over a period of several weeks, and then continued at intervals of a week or two. No definite length of time can be given through which the treatment should be continued, although improvement often manifests itself after a few injections. Rapid improvement does not always occur, but one should not become discouraged too soon, perseverance sometimes bringing ultimate success.

There is some difference of opinion as to whether immobilization of a joint is desirable or not during its treatment, some surgeons even claiming that motion is of considerable assistance in obtaining a good result. The writer's experience has been that a moderate amount of passive motion is of value in certain cases, as it tends to prevent undue stiffness of tendons and joints. Motion should not be employed, however, if pain, swelling or increase of symptoms results.

In many tubercular joints a return to normal cannot be expected under any method of treatment, as enlargements and displacements of bones, fibrous thickenings, and contractions of soft parts, and more or less atrophy of muscles, may permanently persist.

Experience has taught that where sequestra or sinuses exist, the result of treatment with iodoform is not apt to be good, most cases being better fitted for operative interference. The "X rays" may be of service in determining the presence of such sequestra, which in the finished picture should appear darker than the surrounding rarefied bone. Operations are in place when the disease is rapidly advancing and threatening the life of the individual. Very advanced cases are often better fitted for amputation than for more conservative methods of treatment. There is always ample room for the judgment of the surgeon in individual cases, and no hard-and-fast rule can be laid down; but the fact remains that in most instances of joint tuberculosis, where the circumstances of the patient will permit, injections of iodoform should be given a fair trial before operative procedures are resorted to. In a large number of cases, variously estimated at from thirty to fifty per cent. and even higher, good results will be obtained. It is well to bear in mind that a tubercular joint cured by iodoform is apt to be of greater service to the patient, and present a better appearance, than a joint which has been extensively operated upon.

POWDER FOR HAY FEVER.

℞ Boric acid,
Salicylate of sodium, of each, 30 grains;
Hydrochlorate of cocaine, 3 grains.
Mix, and use by insufflation.

—*Journal des Praticiens*, May 2, 1896.

QUININE, SALICYLIC ACID, ANTIPYRIN, ACETANILID, PHENACETIN, THALLIN, AND ALCOHOL, AS ANTIPYRETICS.

In the fourteenth Congress of Internal Medicine, held at Wiesbaden in April, Dr. G. Binz, of Bonn, considered the value of these various antipyretics. An abstract of his remarks is to be found in the *Wiener Klinische Rundschau* of April 26, 1896. Up to the year 1867, he said, everybody had supposed that quinine displayed its action through the medium of the nervous system. At that time the speaker had shown its property as a powerful poison to low protoplasms, especially to those which proceeded from the putrefaction of plants; he had further shown that an antipyretic action in general did not depend upon the nervous centres or upon the circulation, and had maintained that a low organism must be the cause of malarial fever, and that its rapid cure by means of quinine was due to a paralyzing action of the drug on the parasite. Laveran's discovery and the labors of his followers had demonstrated the correctness of this contention. The reduction of febrile heat in other diseases, and the lowering of the temperature of healthy warm-blooded animals, were brought about by a direct checking of the activity of cells concerned in metabolism. It appears from subsequent experimental data, says Binz, that the effects of quinine are: 1. Reduction in the number and diminution of the vitality of the leucocytes. 2. Reduction of the nitrogen

and sulphur in the urine in healthy and in feverish warm-blooded animals. 3. Lowering of the internal heat of the body in the hot vapor bath. 4. Reduction of heat-production in healthy and in feverish warm-blooded animals, as shown by Rubner's calorimeter. Quinine is an antipyretic by virtue of its action on cells—as well on the morbific cells of malarial fever as on the normal cells of the organism. Accordingly, its febrifuge action has both a special and a general character. Further observation will be required to show whether or not it has a direct paralyzing action on other internal diseases.

The properties of salicylic acid are similar to those of quinine. It is a powerful agent against putrefaction and against fermentation, non-poisonous, and not decomposed in the human organism. Its field of action is to cope with the still unknown irritant of acute rheumatism. The weak bond of its chemical union with sodium is no obstacle to it; it is set free by the carbonic acid of inflamed tissues. In some of its effects salicylic acid is very different from quinine: it raises the internal heat in the hot vapor bath, it increases the amount of nitrogen in the urine, and it brings about an increase in the number of leucocytes in the blood. While it agrees with quinine in antagonism to a certain febrile excitant, it differs from it in its action on the cells of the organism, in which it rather resembles the other drugs mentioned.

Antipyrin, unlike quinine and salicylic acid, is but a weak antiseptic and antizymotic. Taken at the beginning of a catarrhal fever, it spreads a perceptible glow over the whole body. Zuntz and his pupils have taught that injury of the corpus striatum may give rise to true fever. This fever does not yield at all to quinine and only slightly to salicylic acid, but very decidedly to antipyrin. Moreover, antipyrin raises the internal temperature in the hot vapor bath. It does not alter the amount of urea in the urine, but increases that of the uric acid. As has been shown in the calorimeter, it heightens the radiation of heat from the skin and at the same time promotes the production of heat internally. It follows from all this that its antipyretic action is by way of the central nervous system—that is to say, of the regulating organs in the brain. It is only a symptomatic antipyretic, but one of rapid action in most fevers. Sedation of a central nervous irritation produced by the cause of the fever is the essence of its antipyretic action.

Acetanilid, phenacetin and thallin apparently act in the same way, or at least in a similar manner. In the case of thallin, however, there is in addition a certain direct germ-paralyzing action in infective fevers.

Up to the year 1869, alcohol was almost universally believed to be heating in fevers, but the speaker and his pupils showed that this belief was erroneous. Whenever alcohol exerts any appreciable effect on the temperature, it is to lower it. In the puerperal form of septic fever it has been demonstrated that large doses of alcohol reduce the fever rapidly. Its mode of action may be manifold. The speaker showed in 1870, however, that it must act through the nervous system and the circulation. Stimulation of the heart may play the part of heightening the circulation in the skin, and thus increasing the radiation of heat. It may be, also, that large doses of alcohol exert an antiseptic action in the system, and so reduce vitality of the bacteria. That such a purely chemical action is possible, aside from other factors, has been made evident to Binz by the failure of a post-mortem rise of temperature in animals that he had treated with large doses of alcohol for high fever. Finally, alcohol augments the urinary excretion and may thus lead to the speedy elimination of the toxins that produce fever and keep it up. Apparently all these factors work in concert, but further experimental investigation is to be desired.—*New York Medical Journal*, May 16, 1896.

A PRESCRIPTION FOR WHOOPING-COUGH.

℞ Powdered belladonna,
Oxide of zinc, of each, 15 grains;
Extract of wild thyme, 30 grains.

Make into forty pills, and give from one to six pills a day.

—*Journal des Praticiens*, May 2, 1896.

ALCOHOL IN THE TREATMENT OF ACNE ROSACEA.

ABRAHAMS contributes a paper with this title to the *American Medico-Surgical Bulletin* of May 16, 1896. He recommends a measure to cure acne rosacea, a disease of the skin which is at once old, common, and abominable, disfiguring the young as well as the old, and in the minds of the laity serving as an index to the moral obliquity of the afflicted victim. The method employed is attended with but a slight amount of pain, and leaves no marked after-effects; it enjoys the advantage of being free from the employ-

ment of ointments, pastes, lotions, and scarifications, all of which tend to inconvenience the patient and make him rather forego the desired treatment. Before proceeding to describe the new mode of treatment, the author refers briefly to the clinical picture acne rosacea presents.

More than acne vulgaris, acne rosacea shows a predilection for the face, the nose especially being its point of attack. Starting at a lower part of the organ, it spreads to adjacent parts, like the lower half of the face, the chin, the cheek bones, and the forehead. The whole face is very seldom involved. Sometimes, in the most aggravated form of rosacea, where a large area of the integument of the face is affected, scattered small areas of skin appear perfectly normal. The classical comparison of lupus erythematosus of the face to the wings of a butterfly is very often admirably seen in acne rosacea, the difference being that in the latter the aërial creature perches on the lower portion of the nose and cheeks.

As a rule, writers divide the lesion into three grades, although the line of demarcation is never hard and fast. Very often one grade insensibly merges into the other. The first grade is that in which a hyperemia of the nose, or nose and adjacent structures, is the main lesion. Sometimes there is only a slight redness over the tip of the nose, readily disappearing on pressure. Then, again, the whole lower half of the nose may be congested. This congestion is either very red, pale red, or bluish red.—The second grade not only includes the first one, but is characterized additionally by small or large dilated blood-vessels running in different directions over the nose and face. Small or large papules, pustules or tubercles are seen over the affected parts. There may be only one or two tortuous blood-vessels running along the nose, or there may be many over the nose and face. In this form of acne rosacea there is in some cases quite considerable hypertrophy of the cartilages of the nose.—The third form is that in which lobules and tubercles grow out of the end of the organ, and very often attain great size. The nose is enlarged in size, and presents a striking resemblance to a big-sized potato with many tuberosities on it.

As the treatment here recommended was only employed in the first two grades, the therapeutics of the third form are left out of consideration.

While it is recognized that the disease is caused in the great majority of cases by gastro-intestinal derangement, yet efforts directed toward the removal of the cause will not remove the lesion, although they may check its progress. In this, as in a great many other skin diseases, the physician can never rely on internal treatment only; he must always be equipped with an abundant stock of local remedies—abundant because no one skin disease will in all cases respond to the same therapeutic applications. Acne rosacea is eminently no exception. Sulphur, resorcin, iodine, and mercury, in different strengths and combinations, are employed. Scarification of the blood-vessels, and electrolysis, are adopted with the dilated vessels. Yet with all these remedies at hand, great perseverance on the part of physician and patient is necessary for relief or cure. Very frequently a complete cure is never effected, in spite of the best efforts. Electrolysis and scarification very often leave scars which, to some sensitive patients, are just as annoying as the original blemish.

The treatment the writer offers, and which has been very successful in his hands, is, as stated above, free from all objectionable features. He employs 95-per-cent. alcohol for local subcutaneous injections. The immediate effect of the injection is a swelling and anemia of the area subjected to it; this condition lasts but a few moments. The next occurrence is an increased redness, which lasts from half an hour to three or four hours. The dilated blood-vessels and papules will be found, after repeated injections, to undergo slow but sure obliteration, until finally the whole lesion disappears and the affected integument appears normal. The treatment, in some cases, lasts eight or ten weeks; in others, a great deal longer.

The technique is very simple. Take a clean hypodermic syringe, with a clean, thin needle. Fill the syringe with twenty or thirty drops of alcohol (95-per-cent.). Then select the part of the nose or cheek which you intend to treat; pinch it up and make your injection. If possible—and it is easily accomplished on the nose—compress with your fingers the part injected so as to retain the alcohol longer in the place. The author never uses more than thirty drops of the fluid, and has never made more than three injections a week. With asepsis, there will be no inflammation, and in the absence of it the remedy can be applied to the same place repeatedly until the desired result—a cure—is attained.

It appeared to the writer that the first form of rosacea, wherein hyperemia of the skin was the main or only lesion, was most amenable to this treatment. The second grade required greater perseverance on account of the papules and pustules present. However, both forms stood it well, as both in his experience were cured. This treatment is not offered as a specific.

He thinks that many a case of acne rosacea may not be cured by this, or by any other form of treatment; but, considering the uniform success in his cases, and the cleanliness and convenience that this new measure offers alike to physician and patient, it certainly seems to merit further trial and consideration. This treatment finds a justifiable parallel in the treatment of nævus vascularis with alcohol. As a matter of fact, the author adopted local alcohol injections in rosacea after he tried it successfully in a few small nævi of the head and face, the actual cautery having been stubbornly refused.

THE USE OF SULPHATE OF DUBOISINE IN PARALYSIS AGITANS.

The *Journal des Praticiens* states that the sulphate of duboisine has been employed by Mendell and Francotte with considerable success as a sedative in the treatment of paralysis agitans. From three to five granules, containing $\frac{1}{200}$ grain each of duboisine, may be given each day; or in other cases hypodermic injections of $\frac{1}{300}$ grain may be employed.

THE QUESTION OF DOSE IN THE TREATMENT OF CERTAIN FORMS OF NERVOUS DISORDER.

In the *British Medical Journal* of April 25, 1896, TYRRELL states that he wishes to bring before the profession, as briefly as possible, a practical point in the treatment of those nervous disorders which arise from exhaustion of the nervous system.

It will be found that these disorders, even when not hereditary, very commonly owe their existence to causes which have come very gradually and slowly into action, and that their chief and characteristic symptom is irritability; for there is a natural law that exhaustion of brain manifests itself sooner or later in irritability.

Now both these facts seem to the writer to indicate treatment by a slow restorative process and by the use of small nourishing doses of nerve tonic, in contradistinction to large stimulating ones. You can give back slowly that which has been lost during a long period of time.

It has always seemed to the writer that the present system of treatment of these irritable forms of nervous disorder by bromides has been founded on the failure to procure satisfactory results by tonics; and this simply because the doses used have been far too large. By the action of bromides we obtain an immediate result; the hypersensitive brain is numbed, as it were, into quiescence, but the relief lasts only as long as the effect of the medicine. If, on the other hand, instead of treating the symptoms, we are content to await a slower but more perfect recovery by gradually building up and restoring the lost vitality of the nervous system, perfect results may be obtained. If we re-nourish the brain, the irritability, which is but the symptom of exhaustion, must cease.

We may roughly divide the nervous disorders which arise from exhaustion, into two classes: 1. Those in which loss of control, and irritable action, are the main symptoms; these are more often found prior to mid life, and include hysteria, epilepsy, chorea, among other disturbances. 2. A second class, which attends chiefly on the decline of life, and is marked more by depression and loss of functional power, would include all the forms of nervous depression which arise from failure of organic function, more especially of the digestive and eliminative apparatus.

Now, in both these forms of nervous failure, good results are to be obtained, provided we can nourish the brain without stimulating it. In order to effect this object, the doses used must be extremely small, and a full allowance of time must be given. There is evidence of the truth of this statement in the fact that the remedies found most useful in the treatment of the more irritable forms of these disorders, especially in children, are those unstimulating, nourishing drugs, such as cod-liver oil, the various preparations of phosphates, and small doses of arsenic or iron.

But it is with regard to the more direct form of nerve tonic that he wishes to speak. Take one drug, for example, which he has always found most useful in the treatment of all forms of nervous disorder arising from exhausted states of the nervous system—nux vomica. If we consult the Pharmacopœia we shall find the ordinary doses of this drug to be from a quarter- to a half-grain, or even

one grain. Now, if in either of the two forms of disorder mentioned we attempt to treat our patients with these doses, we shall find that, in a large majority of cases, we simply increase the intensity of the symptoms; but if we are content to use doses as low as $\frac{1}{100}$ or even $\frac{1}{200}$ grain, continuing the use for months instead of days, the result will be a complete though gradual recovery.

What is here said in regard to the one drug applies equally to all the more direct forms of nerve tonic—strychnine, quinine, arsenic. To obtain anything like a permanent curative effect the dose must be small and long continued.

One of the first favorable results to be noticed from the action of a nourishing dose is the general return of functional activity. The liver begins to secrete bile, the skin excretes acids with increased energy, and in consequence the blood, which has been loaded with effete matters, becomes purer and more nutritious, thus affording renewed vitality to the brain. In all cases it is wise to begin with a dose which is sure to be below the point of stimulation; it is easy to increase.

The space allotted does not permit of more than pointing out the general principle of treatment. That fair trial of this therapeutic point, revolutionary as it is, so far as dose is concerned, will prove as successful in the hands of others as in his own, Tyrrell is confident.

ECZEMA OF THE FLEXURES, AND ITS TREATMENT.

In writing upon this topic in the *American Medico-Surgical Bulletin* of May 16, 1896, CANTRELL tells us that treatment is more effective and requires less time at the bend of the elbow than in the popliteal space. The result of treatment will depend largely upon the active or passive character of the inflammation, and upon the amount of infiltration and thickening. In the acute inflammatory stage the remedies must be astringent and palliative. If the inflammation is extensive, and is found beyond the borders of the patch, local sedatives may be demanded, as, for instance, the ordinary solution of lead, a saturated solution of boric acid in water, the black wash of the American Pharmacopœia (three to ten grains of calomel to the ounce of lime-water). Preference may be given to the solution of chlorinated soda (Labarraque's solution). These remedies may be applied for an indefinite period without doing any harm, and if employed wisely the effect may be seen early. After they have been applied for from ten minutes to half an hour at each application, some soothing ointment should be used. The parts should not be dried with a towel, but simply mopped dry with some soft material, such as a Turkish bath towel. The ointment may be made of zinc oxide, vaselin, lanolin, ointment of rose-water, or, when a stiffer ointment is desirable, a little more wax or starch may be added. If these are not astringent enough, it may be advantageous to add to the ointment calomel, acetanilid, bismuth subcarbonate, or calamine, in the proportion of from twenty to forty grains to the ounce, or boric acid in the strength of from one to two drachms to the ounce of ointment-base. In the acute stage some paraffin paper and a roller bandage may be applied after the ointment, and at all times the parts must be well protected. In the chronic form the use of remedies must extend into the cauterizing grade, but they must not be too caustic. Here the best selection would be salicylic acid, sulphate of zinc, iodide of lead, in the proportion of from twenty to thirty grains to the half-ounce of ointment-base. If these are unsatisfactory, the strength may be increased each time until the proper proportion is reached. If one of these remedies does not prove serviceable, it may be necessary to use the stick of nitrate of silver; or caustic potash may be applied, and then one of the less stimulating ointments may also be used. When the rough portion of skin has been removed, the parts underneath will need treatment; otherwise the condition will return as severely as before. This part of the treatment will consist in the application of some ointment selected from the milder group, continued for an indefinite period. This variety of eczema requires the most thorough study on the part of the practitioner, who will be obliged to use remedies which in other instances he would be afraid to employ.

THE USE OF ICHTHYOL IN INTESTINAL DISORDERS.

La Médecine Moderne of May 13, 1896, tells us that GUINTZBURG has strongly recommended the use of ichthyol in intestinal disorders, particularly those which accompany affections of the genito-urinary tract in women. The dosage is four or five grains a day, preferably in keratin-coated pills, which are believed to pass through the stomach undissolved—thus disagreeable taste and

eructations are avoided. The medicine is best given some little time after meals. Good results were obtained in cases of diarrhea: appetite improved, the abdominal pains were much decreased, and the patient gained in weight; at the same time, if there was a tendency to menorrhagia, the menstrual function became more nearly normal. The best results were in cases of rebellious constipation. He failed to meet with any disagreeable symptoms such as are recorded by Bouchonieff, who found that in persons suffering from renal disease or from chlorosis the ichthyol was apt to produce loss of appetite, nausea, and vomiting. He attributes these disagreeable results to too large doses.

THE TREATMENT OF ACUTE DYSENTERY.

During the past year TESTEVIN has treated thirty-six cases of acute dysentery among the soldiers at Grenoble. His treatment had for its objects: first, to decrease the number of movements; second, to render the intestinal tract antiseptic; third, to remedy the local anatomical lesion; fourth, to combat the tendency to collapse.

To diminish peristalsis, he used hypodermic injections of morphine, $\frac{1}{12}$ grain every hour, a large mustard plaster being applied over the abdomen at the same time to aid in relieving pain. In other instances he found it of advantage, if there was a tendency to febrile involvement, to apply an ice-bag over the lower portion of the bowel. Intestinal antisepsis was attained by the administration of calomel in the dose of eight grains a day, for two or three days, in association with camphor and opium. As soon as the bilious action of the calomel was established so that the stools showed its effects, it was replaced by doses of bismuth varying from 60 to 120 grains in the twenty-four hours, and this was fortified in its effects by the use of five- to ten drop doses of laudanum. These doses of laudanum also facilitated the tolerance of full doses of salol, varying from fifteen to twenty grains in each twenty-four hours. For the local lesion he used injections of creosote made up as follows:

℞ Pure creosote, 15 minims;
Laudanum, 10 drops;
Milk or bouillon, 5 drachms.

To be added to six ounces of boiled water and given as one injection.

Preliminary to this, an injection containing fifteen grains of boric or salicylic acid is administered in order to wash out any fecal matter that may be in the rectum. The warm creosote injection is retained as long as possible. Three injections a day are usually sufficient, and after each one, if much irritability of the bowel exists, a very small suppository of belladonna and cocaine may be placed in the rectum. If the case is very severe, rectal injections of nitrate-of-silver solution may be used.

For the collapse, hot-air baths or immersion baths of hot water, sinapisms to the limbs, and hot bottles about the patient, are ordered. To sustain the heart, hypodermic injections of sparteine, caffeine, and if necessary of ether, are given. Finally, if the condition is extremely grave, he gives injections of normal saline solution into the subcutaneous tissues; these injections are absolutely aseptic and given in the quantity of half a pint to a pint or more, two or three times in twenty-four hours.

By means of this treatment he has been able to cure patients who seemed to be in a desperate condition.—*La Médecine Moderne*, May 13, 1896.

IRITIS.

HENRY JULER states, in the *Medical Press and Circular* of May 13, 1896, that the first canon in the treatment of iritis, from whatever cause arising, is a negative one—to do no harm by the use of astringents. If there be any doubt about the diagnosis, the proper course is to let the astringent wait and to prescribe a mydriatic for a few days until the truth declares itself. Many eyes are irreparably injured by the neglect of this simple precaution.

The second step in treatment of any case of plastic iritis is to aim at the complete dilatation of the pupil. This is of paramount importance, and should be done immediately the condition is recognized. The object is to prevent the formation of plastic adhesions to the lens capsule, or to endeavor to break them down if recently formed, to keep the inflamed iris at rest by paralyzing the sphincter, and to diminish the amount of the plastic exudation by contracting the blood-vessels of the iris.

The best mydriatic is undoubtedly atropine sulphate. It should be used in the form of drops (one-per-cent. solution) instilled into the palpebral sac every three or four hours, or as an ointment of the same strength. If adhesions have already formed and are re-

cent, it is well to use the mydriatic every hour for six consecutive hours; this treatment is likely to break them down, leaving a few dots or a ring of pigmented lymph upon the capsule, which, however, may partially or entirely disappear. If the adhesions are of sufficient age to have become firmly organized, the atropine will not break them down, but it will still cause dilatation of the unattached portions of the pupil and so prevent further complications. This free use of atropine may give rise to local irritation in the form of irritable conjunctivitis, swelling, and erythema of the eyelids and surrounding region. In some cases this is very severe. When this complication arises, the atropine may be changed for sulphate of duboisine, 0.5 per cent., or a solution of scopolamine of similar strength. These drugs sometimes exert a less irritating effect.

Systemic poisoning may also occur from the use of atropine, and is recognized by heat and dryness in the mouth and throat, difficulty in swallowing, thirst, loss of appetite, faintness, and even diarrhea and delirium. An efficient way of preventing this is to let the patient press the puncta lacrymalia at the inner canthus with his finger for a few minutes after each instillation, so as to prevent the drug from passing down the nasal duct.

The next indication in the treatment is to relieve local pain and congestion. One of the best drugs for this purpose is cocaine hydrochlorate. It may be used in conjunction with the atropine just mentioned, in the strength of two-per-cent. solution. It not only assists the atropine in dilating the pupil, but is a powerful local sedative. Those who suffer from the agonizing pain of rheumatic and gouty iritis know too well the value of this precious addition to our pharmacopœia. It is of all things most important in iritis that the patient should be enabled to get sound sleep.

Hot fomentations come next as valuable adjuncts to these drugs. Large pads of cotton wool saturated with water as hot as can be borne are to be placed over the closed eyelids, covered with oiled silk, and then with several layers of warm dry Gamgee tissue lightly bandaged on so as to keep up the warmth of the fomentation.

If pain still persists, and redness shows no sign of abatement, we now resort to local blood-letting. Three or four leeches should be applied to the temple of the affected eye, close to the outer canthus; or an equal amount of blood withdrawn by means of the artificial Heurteloup leech, one of the most marvellous aids we possess in the relief of pain and the control of inflammation.

In persistent cases, where the pain continues, and particularly when the tension of the globe seems to be rather increased, the operation of paracentesis of the anterior chamber often brings immediate relief. The operation is very easily performed, and that without danger of wounding the iris or lens, by using the paracentesis needle. By thus relieving the tension of the eye, the globe seems to be enabled to better absorb the atropine and cocaine, and so dilatation of the pupil and cessation of pain and redness is often a marked result.

The relief of pain, in all cases, is very important, inasmuch as without it the patient is unable to sleep, at least for any length of time, and prolonged healthy sleep is most essential because it gives rest to the eye. If, therefore, the pain is not subdued by the aforesaid remedies, we must at once resort to sedatives, in the form of hypodermic injections of morphine, bromide of potassium and chloral hydrate by mouth, or some other and equally efficient remedy.

The third important point is the treatment of any constitutional dyscrasia that may be found associated with the iritis.

In the iritis described as occurring in the early stages of secondary syphilis, there is no remedy so efficient as mercury internally administered. This is the most common form of syphilitic iritis, and one in which the beneficial effects of this drug are most marked. The author usually begins the treatment by giving two grains and a half of blue pill night and morning. Any other form of administration, such as the hypodermic injection, the mercurial vapor bath, or inunction by the skin, may be equally efficient, or even better than this, but he has, from old Lock Hospital experience, become partial to the old blue pill. The drug must be continued day by day and week by week until the iritis and all the collateral signs of syphilis have disappeared. The only sign for its temporary cessation is that of commencing ptyalism. If the gums become spongy or sore, the mercury must be stopped for a time, and a mouth-wash of chlorate of potash used until the soreness has disappeared. Certain important points in the administration of mercury are: to keep the gums as healthy as possible, to avoid taking a chill, and not to take fruit or alcohol in any form. If the iritis is of an acute

character—indeed, in any form—it is well to keep the patient in bed, and to give him warm baths so as to promote the action of the skin.

In the second or gummatous form of iritis, which has been described as occurring in the later secondary stages of syphilis, the administration of mercury is still indicated. These cases are more rare and generally confined to one eye. The writer always gives iodide of potassium and decoction of sarsaparilla in addition to the mercury, and the symptoms rapidly subside.

In the inherited form of syphilitic iritis we seldom find the iris suffering alone; it is usually sharing the burden with the cornea, the ciliary body, or the choroid. The iritis is more of a chronic variety. Mercury is well received by the patient and very efficient in its action. The patient need not generally be kept in bed, but should be well nourished, encouraged to take exercise in the open air and to avoid alcoholic drinks of all kinds.

In the rheumatic and the gouty forms of iritis the constitutional conditions are still of paramount importance. The pain in these cases is usually very intense, and requires all the local aid just referred to, but the general condition of the system must not be neglected. The patient should, if possible, be kept in bed, and a brisk purge of calomel and rhubarb, followed by a saline aperient, administered. Then the salicylate of soda in doses of ten grains, administered every three or four hours, will be found to have a marvellous effect in reducing the severity of the attack. This may be continued for two or three days, according to the degree of abatement. The free action of the skin should be promoted by hot-air baths once at least in twenty-four hours. A capital hot-air bath can be obtained at the bedside by means of a lamp placed beneath a chair, and a thick flannel cloak fastened round the patient's neck. He can sit and simmer for half an hour with the greatest ease, and perspire copiously. Great care should be taken to prevent a chill, and it is better to sleep between the blankets so as to encourage perspiration after the bath. The writer feels that the importance of keeping patients warm and in bed, and the promotion of skin action by hot-air baths, is considerably overlooked in England; indeed, patients are often allowed to get up and go about as if they were only suffering from a toothache, and when only one eye happens to be affected the other is allowed to go unshaded, and the affected eye is irritated by the influx of light to the sound one. Both eyes should be shaded, both atropinized, and the disease should be treated as one of the greatest importance, and requiring the greatest promptness and activity on the part of the medical attendant.

In the chronic-rheumatism cases the author finds the iodide of potassium and bark a good successor to the salicylate.

In gouty cases he attaches more importance to the patient's dietary and mode of life than to any medicines that may be taken into the alimentary canal. Many of the cases which are now described as idiopathic are in reality due to a gouty condition of the blood, and should be placed on a diet which would not only reduce as far as possible the uric acid directly introduced, but also retard, as far as is compatible with healthy nutrition, the formation of uric acid within the body. The iritis of these cases is always liable to recur unless the habits of the patient are so altered as to improve his blood condition.

Healthy exercise in the open air; a very moderate use of meat; white meats in preference to red; abstinence from all foodstuffs which give rise to dyspepsia; avoidance of all alcoholic drinks while the eye is inflamed, and extreme moderation afterwards; regular habits, *i.e.*, meals at regular hours, no late suppers, daily evacuation of bowels, abstinence from food and drink between meals, and good rest at night—these are the hygienic necessities.

In conclusion, the author advises the physician to know his patient, his habits and his idiosyncrasies, for though hard-and-fast rules are often laid down in the treatment of iritis, if any one disease is more prone to peculiarities than all others in responding to the influences of drugs, iritis might well be said to be that disease. You must be guided by all you see and know of your patient and his environments.

THE TREATMENT OF INFECTIOUS ENDOCARDITIS.

In the *Revue Internationale de Médecine et de Chirurgie* of April 10, 1896, PLICQUE tells us that the ice-bag over the heart calms the patient and relieves the dyspnea and oppression. If the pain is very great, injections of morphine may be given. The question as to whether cold baths should be administered in infectious endocarditis is one which is much discussed. Personally, Plicquet believes they are useful. The diet of the patient should consist entirely of milk, and

he should receive small quantities of alcohol and quinine or salicylic acid. The alcohol should be given in the form of Bordeaux wine or champagne, and coffee may be used as a stimulant. He thinks alcohol is particularly hurtful in cases in which there is cardiac distress, and he believes that the inhalation of oxygen in considerable quantities, at least one hundred quarts a day, gives good results. Quinine is given in the dose of from eight to fifteen grains a day, the sulphate being chosen by preference. If salicylic acid is used, thirty grains a day are given to a robust adult and fifteen grains to one who is less strong.

The following prescription may be employed:

℞ Salicylic acid, 10 to 30 grains;
Cognac,
Syrup of orange flower, of each, 6 drachms;
Distilled water, 3 ounces.

Should this dose produce headache or vertigo, it must be decreased. Should the heart become feeble, it may be well to give small doses of the tincture of digitalis, or the following may be used:

Tincture of digitalis,
Tincture of valerian, of each, 1 drachm;
Tincture of the chloride of iron, 20 drops.

This is to be taken once, twice, or thrice a day, according to need.

CÆSAREAN SECTION: SUTURE OF THE UTERUS VERSUS TOTAL EXTIRPATION.

Coe (*Medical News*, May 30, 1896), in a valuable paper under the above title, reaches the following conclusions:

Induction of premature labor is, of course, always a possible alternative, but the statistics of repeated Cæsarean operations show that many of the ignorant women do not apply to the accoucheur again until they are too far advanced for its successful application. Craniotomy is too often the necessary result of such attempts at saving the premature child, whose tenure of life is slight at the best.

As to the simplicity of the technique in suture of the uterus, there can be no question. That it is unaccompanied by shock, is by no means true. In upward of a dozen operations the author has attended, there was marked shock in every one, the patient requiring vigorous stimulation; yet all were in good condition beforehand, and in several cases labor had not begun. There is no comparison between the shock in these cases and that in a prolonged hysterectomy for uterine fibroid. Certainly the time necessary to properly complete a Cæsarean section is often greater than in an ordinary hystero-myomectomy. It is granted that sepsis can be eliminated in the majority of cases, at least where there has been no previous manipulation by hands of doubtful cleanliness. But our American records show that many patients have succumbed to sepsis, even up to this year—not necessarily through any flaw in the technique, but because the operator left a uterus which was already infected. It is a fact that when the surgeon is compelled to operate upon patients who have been frequently examined, or subjected to prolonged attempts at delivery, this element of failure cannot be eliminated positively; hence the risk of adding to the unfavorable statistics.

The former statistics of the Cæsarean and Porro-Cæsarean operations prove nothing, since it is well known that the latter include the majority of the "late" or unfavorable cases. It would be more just to class them under the head of puerperal hysterectomy for septic infection, since the conditions are nearly the same. On the other hand the old Porro operation, with extra-peritoneal fixation of the stump, was a crude and imperfect procedure compared with modern total or partial abdominal extirpation.

To return to the alternative—total abdominal extirpation of the uterus and adnexa. The advantages which the radical operation presents are:

1. Rapidity of execution. Any one who has had occasion to perform the operation must have been impressed with the ease with which ligation of the broad ligaments and separation of the bladder can be accomplished as compared with the same steps in an ordinary abdominal hysterectomy. In one of the writer's cases of celiotomy for rupture of the parturient uterus (clamps being used) it required only five minutes; in another, in which ligatures were used, about ten. It is not necessary to elevate the patient in Trendelenburg's posture. Time is an important factor, especially in cases of women who have been many hours, or even days, in labor, and are in collapse before they are placed on the table. There is no more shock or loss of blood than after suture of the uterus.

2. By removing the entire uterus we are reasonably certain that no infected tissue has been left within the abdominal cavity. In

the writer's first Porro case, seven years ago, the patient did indeed recover, but her cervix had been infected before the operation and sloughed out entirely. Free drainage per vaginam may save even the most desperate case. No uterine sutures are left to give subsequent trouble, as in reported cases.

3. Neoplasms of the ovaries or uterus, or diseased appendages, are removed at the time, instead of being left to give future trouble. Removal of the adnexa after Cæsarean section has always been fraught with considerable risk, since the large soft stumps, with thin distended veins, are exposed to more or less traction during uterine contractions. Fibroids apparently not large enough to justify a Porro at the time, have been left behind to give subsequent trouble.

4. Convalescence is quite as rapid as when the uterus is sutured.

In advocating total extirpation of the uterus, under these circumstances, Coe states that he has no intention of stirring up the old controversy of supra-vaginal amputation of the cervix *versus* hysterectomy. The results recently reported by Dr. Davis—three operations by which the mothers and children were all saved—are sufficiently convincing to need no comment. Moreover, the similar operation for fibroid tumors in the hands of Kelly, Baer, and many others, furnishes statistics which admit of no unfavorable comment. He calls attention to the fact that Dr. Davis's operations were performed upon patients who could be regarded as positively aseptic, so that in dropping the stump of the cervix he was fairly certain that no infected tissue was left behind to vitiate his own careful technique.

In such a case as Coe's, and in others in which the surgeon is obliged to operate under less favorable conditions and upon patients who have been subjected to repeated examinations and manipulations, one might well hesitate about leaving the cervix and closing the cavity without drainage. Moreover, the condition of the patient may be such that time is an important element, and the author believes that at full term the removal of the entire uterus is a simpler and more rapid operation than supra-vaginal amputation with such careful suturing of the stump as is necessary in order to secure a successful result.

In his experience, the objection with regard to weakening of the vaginal roof by removing the cervix is largely theoretical in puerperal hysterectomy, as well as in total extirpation for any cause. He has been looking for a case of vaginal enterocele ever since he began to do the operation, but in an observation of at least one hundred cases in his own practice and that of his friends who perform total abdominal extirpation, he has been unable to find one. Some of his patients have been under observation for two or three years.

To recapitulate: Granting that the indications for Cæsarean section are becoming every year more clearly defined, and that the operation will probably be more rarely performed in the future, in every case in which we decide to resort to it we should ask whether we are justified in allowing the patient to incur the risk of a second operation. The way to avoid this risk is to ligate the tubes, to remove the adnexa, or to extirpate the uterus. As experience has shown, the first two procedures do not furnish positive immunity against a second impregnation. Under some circumstances the surgeon's duty is clear. The presence of extensive disease, or of neoplasms of the uterus and adnexa, brings the case under the ordinary rules of modern surgery. Absolute failure of the uterus to contract after evacuation of its contents (a rare but not impossible contingency), and undoubted, or even suspected, infection of the organ, were long ago recognized as indications for Porro's operation. To this may be added a dyscrasia (as tuberculosis) which renders a subsequent pregnancy highly undesirable. There remains the class in which dystocia is due to marked pelvic deformity.

The wishes of the patient should be considered when they really carry weight, but the author agrees with Dr. Davis that this rule cannot be universally applied. As he fairly states it: "In women of good constitution and happily married, few will be found who will not desire to retain their power of reproduction. On the other hand, in married women of feeble strength, in circumstances of poverty, the burden of childbearing may well be removed. In women illegitimately pregnant and belonging to the class of professional paupers who are likely to be, with their progeny, a constant burden on the State, the continuance of reproduction is certainly to be avoided. Most of the latter class have little conception of the responsibilities of maternity, and even if asked to make a choice are incapable of doing so intelligently."

THE TREATMENT OF VULVO-VAGINITIS IN CHILDREN.

SHEFFIELD (*American Medico-Surgical Bulletin*, May 30, 1896) contributes a careful paper on this subject, with remarks upon purulent ophthalmia, and a report of sixty-five cases.

He did not find any malformations or strictures of the vagina, psychoses, anemia, etc., following vaginitis, and this leads him to believe that these supposed sequelæ existed before the attack and were probably overlooked.

Judging from the writer's experience, he does not hesitate to pronounce the prognosis of infectious vulvo-vaginitis as good, in the absence of complications. The course, however, is protracted, say from four weeks to four months—at any rate much more obstinate than in married women, probably due to the fact that the intact hymen in children interferes with the outflow of the vaginal discharge, so much so that we are often able, with the finger in the rectum, to dislodge a large accumulation of pus from behind the hymen.

Those practitioners who were so fortunate as to effect cures of vaginitis in about twelve days have either had to deal with simple catarrhal vaginitis or else failed to see their young patients again after the relapses set in.

The prognosis of infectious vulvo-vaginitis in itself being good, our main object in the treatment of these cases should be directed to combat the series of complications, and this, with patience and proper measures, can very easily be accomplished. All cases of infectious vulvo-vaginitis, whether in private or hospital practice, have to be strictly isolated, and the common use of privies, baths, beds, towels, etc., forbidden. Through such precautions the further spread of the disease will soon be checked.

Purulent ophthalmia as a complication of infectious vulvo-vaginitis is most frequently contracted either from conveying the purulent discharge from the vagina to the eyes, by means of the fingers, or the child, in rolling down from the pillow, may get into her eyes some of the pus particles which are usually found adhering to the bed-clothes. To frustrate these means of infection, the writer devised a bandage, so constructed that the child could bring her forearms upward, as in taking her meals, but not downward below the fifth rib. Before going to bed the eyes were covered with a thin layer of absorbent cotton and a wide but short bandage. The night nurse was to observe that the bandages were not displaced. Since the adoption of this plan of prophylaxis no more cases of purulent ophthalmia have occurred. The writer's predecessor had, previous to this, given orders to wash the eyes of each child affected with vaginitis, two or three times daily with a saturated solution of boric acid, and, notwithstanding that his orders were carried out with the most scrupulous care, they proved of no value. Still more, two cases treated for chronic conjunctivitis with instillations of boric acid (three-per-cent.) every three hours and an application of silver nitrate (0.625-per-cent. in water) once a day, have, during this time, contracted purulent ophthalmia, proving conclusively that boric acid as well as weak solutions of silver nitrate are by no means reliable preventives of purulent ophthalmia. The writer believes that a strong solution of nitrate of silver, say ten grains to the ounce of water, is an excellent abortive, if used at the early stage of lacrymation. Two cases were aborted by such an application.

From the knowledge gained from the cases of vaginitis under the writer's care, he feels certain that in most instances peritonitis, as well as metritis, is the direct result of infection by the vaginal secretion being forced into the uterus, Fallopian tubes, etc., during douching. This can be avoided: first, by raising the douche-bag not higher than two feet above the level of the child's body; second, by inserting a small, soft rubber catheter into the vaginal canal no further than one inch. For the prevention of synovitis or rheumatism, the administration of a mild alkaline diuretic, like citrate of potash, is of service.

As to the actual treatment of infectious vulvo-vaginitis, the reader is referred to the several text-books upon the subject. It may also be added that in the administration of hot baths, which are very beneficial in the acute stage of the disease, care must be taken not to immerse the child's head in the water, no doubt contaminated by the purulent discharge. The writer found it of advantage to place the children in Sims's position when douching, as in this way the rugæ become well distended, and consequently the medicated water reaches all parts of the vagina better than in the dorsal position.

To avoid involvement of the cornea in purulent ophthalmia, extreme care must be taken not to apply the slightest pressure against the eyeball. By filling the eye with

vaselin well under the lids during the intervals of cleansing, the friction of the hypertrophied conjunctiva against the cornea is greatly lessened.

The author's conclusions in reference to infectious vulvo-vaginitis in children may be summarized as follows:

1. Infectious vulvo-vaginitis in children is of gonorrheal nature; the diplococcus present in the purulent discharge is invariably identical with that of Neisser, decolorizing by Gram's method.

2. The infection can be conveyed through common privies, baths, beds, clothing, etc.

3. The symptoms accompanying the disease are less severe than those described in most text-books.

4. Most of the complications are preventable.

5. The value of boric-acid or mild silver-nitrate solutions as prophylactics of purulent ophthalmia is very doubtful.

6. Silver nitrate in strong solution is a reliable abortive of purulent ophthalmia, if used in the very earliest stage.

7. The mere presence of gonorrheal discharge in a small girl, without injury to the genitalia, does not prove that rape has been attempted.

8. Physicians in charge of asylums, or similar institutions, should be on their guard not to admit girls with vaginal discharge, unless they can convince themselves that this is not of gonorrheal origin.

9. The subject in question deserves a more careful study by the gynecologist and pediatricist, as well as by the general practitioner and medical jurist; and by their united observation we should in the near future be enabled to dispel any and all doubt as to the real nature of infectious vulvo-vaginitis in children.

THE SURGICAL TREATMENT OF ROUND ULCER OF THE STOMACH.

WEIR and FOOTE (*Medical News*, April 25, 1896), after reporting one successful case and one fatal case of gastric ulcer, contribute an interesting statistical study on this subject. Five-sixths of the cases occur in women; in perforation of duodenal ulcers the figures are reversed, the majority occurring in males. The average age for the women is twenty-five years; the youngest was fourteen years old. The average age of the men is thirty-nine years; this age in duodenal perforations is essentially the same. As to the seat of perforation, in the great majority of cases it was in the anterior wall and usually near the cardiac orifice; in most cases the perforation could be reached and sutured. In only eight cases was suture impossible either from the location of the ulcer or the condition of the stomach-wall. In sixteen cases there was no perforation found, twice because it was considered unwise to separate adhesions between stomach and liver to look for it—a fatal caution. In less than half the cases was gastric ulcer suspected before perforation occurred; a few gave no previous gastric history, but the largest number complained of symptoms variously interpreted as gastritis and indigestion. Vomiting is only likely to be absent in large perforations. It seems an invariable rule that perforation is attended by an attack of sharp abdominal pain. The average time which elapsed between perforation and operation was thirty-six hours. The extremes were two hours and 336 hours. In twenty-one cases which recovered the average time was nineteen hours, while in two-thirds of these cases it was less than twelve hours. In the fifty-five unsuccessful cases the elapsed time averaged forty-three hours, and was over twenty-four hours in two-thirds of these.

It is therefore evident that when more certain diagnosis brings the patient sooner to the operating-table, the percentage of recoveries will be improved. The essential points in diagnosis are, nearly always: A history of gastric trouble, and an attack of sharp pain referred usually to the epigastric or left hypochondriac region, followed sometimes by pain in the lower abdomen. The pain is at first intense, often producing collapse, unconsciousness, or even death. Usually it quickly moderates. Vomiting may or may not be present; vomiting of blood is very unusual. After some hours, the time varying according to the amount of the gastric contents, the symptoms of peritonitis manifest themselves.

Physical examination of the patient is of great importance. In the earliest stage of the trouble the pallor, the anxious countenance, the feeble pulse, the thoracic respiration, and the rigid abdomen, all point to injury of the peritoneum. Just as in beginning appendicitis abdominal rigidity is sometimes more marked on the side where the lesion is situated, so in perforation of the stomach the abdominal muscles of the left side are apt to be more tense than those of the right. If the stomach were empty, or nearly so, when per-

foration occurred, palpation of the abdomen would only serve to locate the tenderness and show the rigidity of the muscles. If a large amount of fluid has escaped from the stomach, its presence may be demonstrated by the usual tests for peritoneal fluid. In certain cases the induration in the wall of the stomach about an ulcer makes a tumor which can be felt by abdominal palpation. This is worth remembering in this connection, although the tenseness of the abdominal muscles in perforation makes deep palpation difficult.

If gas has escaped from the stomach or has developed by fermentation of the escaped gastric contents, the hepatic and splenic dullness may be reduced in area, or wholly disappear. It is evident that this condition might also follow intestinal perforation; but when the abdomen is opened, the distinction between the two is plain, for the gas from the stomach is without odor, or slightly sour, while that from the intestines has a fecal odor.

Comte, whose article on gastric troubles will repay perusal, says that perforation of the stomach is most easily confounded with acute intestinal obstruction, but the fecal or fecaloid vomiting is usually present in the latter trouble.

Perforation may also be confounded with an attack of pain in a gastric ulcer which has not perforated. It is just such facts which make one skeptical concerning the cases of perforation (?) which are treated successfully by rest in bed and rectal feeding.

Barker, in the *Clinical Journal* of April 8, 1896, in a lecture upon this same subject, states that he has had recently four cases of gastric ulcer which perforated and required surgical interference. An analysis of 101 cases admitted into Guy's Hospital gives fifty-nine males and forty-two females. Nevertheless, Barker holds that it occurs more frequently in females than in males. All the cases Barker records were in serving maids, and he states that it is a remarkable fact that almost all cases on record have been from the servant-maid class, the perforation being in the anterior surface with indurated margins.

In three of the cases on which he operated, in addition to the middle cut the rectus was divided on the left transversely. Probably the best incision is that which opens the abdomen in the middle line from the ensiform cartilage to the navel, supplemented by a transverse cut, which gives ample room to attack the stomach.

A most important requisite for a successful operation is speed. The stomach must be emptied and the abdominal cavity swabbed out. The first thing to do is to make sure that the space between the liver and the diaphragm is clean. It is well to slip the hand into the abdomen between the liver and the diaphragm and wipe both surfaces of the space with a sponge repeatedly, afterwards working down to the spleen, which is very apt to have about its mesentery a collection of fluid; then down by the kidneys and into the pelvis, wiping the bladder and working up the right side around the kidney to the liver, the right subphrenic space being cleansed like the left. Particular attention must be given to the depression behind the gall-bladder. Having thus cleansed the abdomen, the perforation should be stitched. As a rule it is wise to drain, and besides the tube it is well to put in strips of iodoform gauze laid in various directions—one, for instance, would go from the middle opening in the abdominal wall up to and over the liver; another under the liver and over the stomach; another on one side; and a fourth on the opposite side—the ends of all projecting from the median wound. These strips may remain for a variable time. In a case which recovered, the author took them and the tube out on the fifth day. Most of the cases are better without elaborate flushing.

The first case operated on did well for seven days; the temperature then rose, and she died on the fifteenth day. There was a large abscess between the diaphragm and the liver on the left side, the remainder of the abdomen, except just under the wound, being perfectly normal. This case was operated on twenty-six hours after perforation. The next case, operated on seven and a half hours after the perforation, had not a bad symptom. The third patient, operated on twenty-eight hours after perforation, died within the first twenty-four hours. The last patient operated upon also died; he was seen thirty-six hours after perforation occurred.

OBSERVATIONS ON SPLENECTOMY.

BOND (*The Lancet*, May 2, 1896), in an interesting article on this subject, states that while our knowledge of the function of the spleen as far as regards its relation to the corpuscular elements of the blood is somewhat fragmentary, still evidence has accumulated latterly which points strongly to the very important share the spleen takes in the

breaking up of the red corpuscles. It is in order to emphasize this point that he publishes the following remarks:

It seems pretty clear from the experience of several observers—Gibson and others—that the effect of removal of the spleen in dogs is to produce at first a diminution in the number of red corpuscles and an increase, both relative and absolute, in the number of white corpuscles; this condition reaches its maximum in a few weeks, and then, owing probably to the fact that other organs concerned in blood metabolism, such as the marrow and lymph-glands, take on compensatory action, the normal proportion of red to white corpuscles is re-established in a few months. In the case of man, although numerous cases of splenectomy have been recorded, there are very few in which the blood condition both before and after operation has been accurately noted. In Credé's case the immediate effect of removal was an increase in leucocytes, but the blood reached its normal state later. In this case, however, the spleen was cystic, and it is very important to bear in mind that in experiments on animals it is a physiologically healthy organ which is removed. So, too, in those cases in man in which the spleen has been removed for cystic disease, the organ is not probably in that active physiological condition as regards blood metabolism that it is in in other cases of splenic hypertrophy and splenic lymphadenoma, consequently the effect on the blood of removal of the organ is likely to be very different in the two classes of cases. With these few preliminary observations Bond narrates the following two cases, completing his article by a few comments on the effect of removal of the spleen on the blood.

A married woman aged thirty-five years, having two children, the youngest six years, was strong and healthy until two years ago, when, without any apparent cause, her health began gradually to deteriorate and she first noticed a swelling in the left hypochondrium. During these two years she has gradually lost strength and flesh and become more anemic, and has suffered, too, from occasional attacks of vomiting, until during the last fortnight the vomiting has been excessive and the asthenia very great. There was a large mass in the left side, having all the characters of an enlarged spleen; it was very movable, so that the sharp notched anterior margin could be turned right over and made to lie in the left flank, and it was probable that this extreme mobility, by causing stretching of the gastro-splenic omentum, may have been the chief cause of the vomiting. The temperature was normal; the urine healthy, but somewhat deeply pigmented, with occasional deposit of urates. After a few twenty-grain doses of calcium chloride on the three previous days, the spleen was removed on March 27, 1895, four days later. A median incision was made and the enlarged organ delivered lower end first; owing to its extreme mobility and the absence of adhesions this was not difficult. The pedicle was wide and contained some inches of the tail of the pancreas, which easily came outside the abdomen. The splenic artery, enormously enlarged, was first ligated separately, then the rest of the splenic mesentery was secured in several portions and the organ removed. The abdominal wound showed a tendency to bleed unduly, and the blood appeared brighter and more arterial than usual; after swabbing with hot astringent solution it was sutured, and no further hemorrhage occurred. Recovery, from the surgical point of view—that is, as far as the wound was concerned—was uneventful. At the end of the first week, after a week's subnormal temperature, the patient complained of considerable pain in the region of the liver, and the temperature ran up to 101°; it came down, however, in a few days, but ran up again to 103° a fortnight later, and for three days continued of remittent type, with morning remissions, again becoming normal on the third day. These irregular rises of temperature, having no surgical cause, were noticed in two other cases of splenectomy, and indeed, in patients who are suffering from splenic enlargement with or without leucocythemia, the temperature line, even when normal or subnormal, shows the evening rise and morning remission; it may probably depend on the blood condition and requires further investigation.

The effect of the removal of the organ on the blood may next be considered. The blood was examined three days before operation; at that time the red corpuscles numbered only 3,000,000 per cubic millimeter, the white were in the proportion of about 1 to 250 red, and the hemoglobin was only fifty per cent. of the normal quantity. The patient was on a generous diet and small doses of arsenic and iron. Seven days after removal, the patient having been on the very low diet usual for the first few days after abdominal section, the red corpuscles numbered 6,000,000 per c. mm., the white were 1 to 250, and the hemoglobin had risen to

eighty per cent. The blood was now examined at intervals of about a week; the number of red corpuscles was not maintained, but fell on April 11 to 5,800,000, on April 21 to 5,200,300, but rose again on April 28 (which date coincided with the febrile attack) to 6,000,000, falling again, however, till on May 28 it was 4,120,000. The white corpuscles showed a very slight progressive increase, and the hemoglobin fell after the first week from eighty to seventy per cent., and remained at about sixty-five per cent. of the normal. The marked change in the patient's appearance after the first week, from pallor to a florid complexion, was very striking, and when last seen on June 8 the appearance was maintained; she expressed herself as feeling well, though still weak; the urine was now, and had been since the operation, pale. The spleen after removal and when drained of blood weighed one pound, was uniformly enlarged, of a dark-blue color, and on microscopical examination showed the appearance of simple hypertrophy—that is, enormous increase of the pulp tissue or reticular structure crowded with lymphocytes. Besides the changes in the corpuscular elements in the blood mentioned above, there were other changes.

A specimen of blood both before and after operation, when examined immediately after withdrawal, showed a considerable number of masses of granular protoplasm like islands in the plasma. On staining thin films of blood coagulated by heat immediately on withdrawal, with Grubler's eosin-hematoxylin-glycerin stain, these irregular protoplasmic masses stained deeply with hematoxylin, contrasting strongly with the eosin-colored red corpuscles. As to the nature of these bodies: knowing that other observers have described the appearance of granular bodies in the blood, which have been really a post-mortem change and due to aggregation of blood-platelets and other causes, it seemed likely that such might be their origin in this case. The fact that they were present in a film of blood heated on a cover-glass immediately on withdrawal shows that the change must occur very rapidly. In order, however, to decide this, the writer first examined the blood by pricking the finger through a drop of Hayem's fluid, and allowing the blood to run directly from the vessels into that fluid, as practiced by Hayem, but he found that these granular masses were still present as such in the liquid. However, when using osmic acid (two-per-cent.) instead of Hayem's fluid, they were not present, as such, in the blood as it left the vessels, but rather an increase of small disk-like granular bodies exactly resembling the figures of Hayem's blood-platelets, fixed, no doubt, by the osmic acid in the form in which they circulate in the vessels.

An examination of the blood of other patients suffering from other diseases was now undertaken, and while granular masses were occasionally found in many of the diseases accompanied with high temperature, especially of the infective type, in which there was increased activity of the blood and lymph organs, he found them especially abundant in a case of phthisis in the last stage with a very marked hectic temperature with an evening rise of 103.5°. Here, too, they were absent in the blood received into the osmic-acid solution, and instead was found a marked increase in the blood-plates as compared with normal blood. The same masses were found, with the same antecedent increase in blood-plates, in a case of splenic leucocythemia, but in a very much less marked degree, and in this case the very numerous leucocytes were of a large, faintly granular kind, with dividing nuclei, and the small, deeply granular lymphocytes, whereas in the case of splenectomy the few leucocytes were like those found in the normal blood. It is also interesting to note that the same granular masses were found to a very excessive extent in a patient in whom the spleen had been removed by Mr. Marriott four months previously. The organ is now in the Museum of the Royal College of Surgeons of England, and on microscopic examination showed the same character of hypertrophy together with numerous collections of large multinucleated cells like giant cells. In this case there was no leucocythemia and not much anemia, but there was a very marked tendency to hemorrhage; and, further, the writer found that these granular masses were practically absent from the blood of a patient when examined fifteen months after removal of the spleen for cystic disease, also by Mr. Marriott.

Such, then, are the facts as far as ascertained. Before drawing any inferences from these as to any function the spleen may have in blood metabolism, it may be well to call to mind for a moment the various views held as to the physiology of the normal spleen. It is supposed that the spleen in man takes some share in the retrogressive changes in the red corpuscles, in some way tending to dissociate the hemoglobin from the effete corpuscle, and thus prepare the way for the further

change—the conversion of hemoglobin into bilirubin which occurs in the liver (Foster). It is held that the spleen, as a part of the lymph-gland system, produces leucocytes, which are thus added to the blood. It is further held that the spleen produces red corpuscles either by the deposition of hemoglobin in the large cells of the spleen pulp, or, as held by Virchow, that it converts the leucocytes into the hemoglobin-holding or red corpuscles during their slow passage through the pulp tissue, and that the essential factor in the disease leucocythemia is a failure to bring about the conversion of white into red corpuscles. Among these various suppositions it seems clear that in the evidence derived from pathological investigation, as in that derived from experiments on animals, it is very difficult to isolate, as it were, the spleen from the rest of the organs, lymph-glands, bone-marrow, etc., concerned in blood metabolism, and to apportion the exact amount and kind of function to the spleen which it really possesses. The fact that, in the case of splenectomy, after removal of a hypertrophied organ the red corpuscles doubled in number in one week after operation, other things remaining the same, is pretty clear evidence that the spleen in this case was previously to removal actually engaged in the destruction of the red corpuscles.

The next point is the presence in the blood of the granular masses which are probably not present in the circulating blood, which have for their antecedents an increased number of blood-plates. The masses are so large that it is somewhat difficult to understand how they can be formed by the aggregation of numbers of blood-plates only, and it looks as if each aggregation of plates was a focus from which at the moment of withdrawal of the blood some effect was produced on the plasma around, causing it to become granular and to take the hematoxylin stain. The fact that these masses, with their antecedent increase in number of plates, gradually increase after splenectomy, and were also present in a marked degree in one patient four months after removal of the spleen, is clear proof that the blood-plates are not formed entirely or even chiefly in the spleen. The further fact that this increase of blood-plates is present together with a marked tendency to hemorrhage is a matter of peculiarity and of interest because it has been strongly held by Hayem, Osler and others that the blood-plates are one of the determining factors in causing coagulation of the blood.

Finally, it is becoming more evident that these different cases of splenic diseases, varying as they do in their clinical character, in the degree of anemia, and in the presence or absence of leucocythemia, have each a different pathology; and that in many cases the disease is a general one affecting the whole system of blood-forming organs, while in others the spleen itself is the organ alone involved; and it is, of course, in this latter class that the operation of splenectomy holds out the best prospect of success.

DR. GIBNEY'S METHOD OF TREATING SPRAINED ANKLE, WITH REPORT OF SEVEN CASES.

F. D. Reese, in the *Medical News* of April 18, 1896, states that while perusing the pages of the *New York Medical Journal* of February 16, 1895, he came across an article entitled: "Sprained Ankle—A Treatment that Requires No Loss of Time; Requires No Crutches, and is Not Attended with Any Impairment of Function." The article was written by Dr. Gibney, of New York. This method of treatment of sprained ankle, with rubber adhesive plaster, he has called Gibney's, although Dr. Gibney claims no priority, but says Dr. Cotterell of London used a similar process.

For a sprain about the external malleolus, take a roll of the best rubber adhesive plaster, about one inch wide. Begin at the outer border of foot, near the little toe, and carry it around the heel to a corresponding point on the inside of the foot. The next strip is applied vertically: beginning at the juncture of the lower and middle thirds of the leg, it passes down along the tendo Achillis, around the heel, and up the leg to a point opposite the place of beginning. The rest of the strips are applied in the same manner as these two, overlapping each other about one-third, until the ankle and instep are all covered, except one inch in the median line. This is left to guard against any possibility of cutting off the circulation.

Dr. Gibney says: "If the sprain involves the tarsal joint itself, or mid-tarsal joint, straps should be applied as follows: The first one begins on the inner side of the heel, passes back of the heel, below the external malleolus, over the dorsum of the foot, and terminates just below the ball of the great toe. The second one is started just under the external malleolus, passes back of the heel, over the front of the foot, and ter-

minates just under the outer side of the foot, near the small toe;" but this Reese hardly deems necessary if the straps are applied as described, bringing the ends of the plaster within one inch of each other.

It is apparent that these strips of plaster become a closely interwoven and tight-fitting splint, that restricts motion, sustains the injured ligaments and tendons, and prevents effusion. This treatment impressed the writer as being the ideal one, and he resolved to give it a practical test. The history of seven cases treated by this method are presented, after which the reader is left to decide whether the results justify the title of Dr. Gibney's article.

CASE I.—Charles R., aged twenty, sprained his right ankle as the result of a misstep while working in the woods in December, 1894. He had recovered from the more acute symptoms and pain when he came to the writer's office, March 13, 1895, but could not then step squarely on his foot, and was compelled to support himself with two canes. Examination of the ankle revealed a subacute inflammation and tenderness on pressure around the external malleolus and over the tarsal bones. Adduction and flexion of the foot caused more or less pain, and the patient said (which was evident) that he was unable to do his work. Reese applied the straps as described, and the patient was able to immediately abandon the canes and walked with but a slight hitch in his gait. He was directed to wear the straps until they came off, if they continued to afford relief. Some months later he said he had worn the straps for six weeks, and that, as far as he could see, he had made a perfect recovery.

CASE II.—Mrs. L., aged thirty-six, fell from her bicycle and sprained her left ankle, April 20, 1895. The writer saw her at her home the same afternoon. Around the external malleolus and over the tarsal bones the tissues were swollen, and there was extravasation of blood. Motion was limited and pain extreme. He applied the straps, and she was able to take a few steps around the room. Some weeks later she reported that she had suffered a good deal of pain for about a week, after which she gained rapidly and was well at the end of three weeks.

CASE III.—Mr. R., minister, aged fifty, slipped and sprained his left ankle June 26, 1895. His wife applied hot fomentations until the day following, when Reese was called to see him. He found him in bed convinced, as he expressed it, of the "physical impossibility" of walking. The tissues were slightly swollen around and under the external malleolus, with some ecchymosis. There was great tenderness upon pressure, and limited motion. Applied the straps, and patient was able to walk around the room with ease. The day following he walked to a near neighbor's. This was on Wednesday, and the following Sunday he walked twice to church and preached at both services. July 3, changed the straps. There was some tenderness, and tissues were black and blue. On July 16, discharged the patient.

CASE IV.—Mr. S., aged sixty-five, broom-maker, came to the writer's office on crutches, June 27, 1895, and gave the following history: Fell off the porch, eight weeks before, and sprained, as he supposed, his left ankle. On examination the writer found he had not only sprained the ankle, but fractured the fibula, low down. The straps were applied, which gave him a great deal of comfort as far as the ankle was concerned. Reapplied the straps July 13, when there was less swelling, and the callus at the break was more easily felt. He was able to walk with one cane; from this time his recovery was uninterrupted.

CASE V.—Mr. B., aged thirty-three, came to the author's office on crutches, June 28, 1895, suffering from sprain of left ankle, which occurred two days previously. The ankle was badly swollen around external malleolus, and instep ecchymotic. Manipulation caused pain, and the foot was restricted in its movement. Applied the straps, which gave immediate relief, and he was able to step on the foot. Reapplied straps July 2, and discharged the case, well, July 19.

CASE VI.—Mr. H., aged thirty-one, slipped and sprained his right ankle, August 19, 1895. He called at the Doctor's on the 20th, and was then suffering great pain during locomotion. The ankle was found swollen about the external malleolus, but there was no extravasation of blood. Applied the straps, and the patient experienced immediate relief. He lost no time, but worked at his trade, which was that of a moulder. August 27 he was discharged, but instructed to wear the straps a few days longer.

CASE VII.—Miss K., aged twenty-four, was brought to the office July 17, 1895. She had fallen and sprained the right ankle and tarsal joints; could not step on the foot, and suffered a great deal of pain from it. The movements of abduction, flexion and extension were restricted. The tissues were

slightly swollen over these joints. Applied the straps, but she was unable to stand (probably in part due to fear). She was greatly relieved of pain. July 22, five days after, she removed the dressing, at the suggestion of a friend, believing the parts should be bathed. July 23 she suffered so much pain that she sent for her physician, who reapplied the straps, which gave her instant relief. Her recovery was uninterrupted, and she returned to her work fourteen days after the first application of the straps.

A CRITICAL RÉSUMÉ OF RECENT PROGRESS IN CEREBRAL SURGERY.

The discussion on cerebral surgery at the recent meeting of the New York State Society does not offer much encouragement to the enthusiast in this branch of work. The conclusions reached must be of value, as they expressed the deliberate opinion of several prominent neurologists who have had a large experience in this class of cases. It cannot be truthfully charged that surgeons have ever been over-enthusiastic about operations on the brain. Ten years ago it was expected that the advances in cerebral localization would open up an avenue for successful surgical interference in many cases of cerebral disease. It must be acknowledged, however, that this expectation has not been realized. It is perhaps as well that the views of the neurologists referred to were somewhat discouraging, for it will tend to limit operative interference in questionable cases, and the inference must naturally be drawn that in the future, cases for cranial operation, especially when for the cure of epilepsy, will be more carefully selected than has been the custom during the past few years. The difficulties in the way of correct diagnosis ought to stimulate the diagnostician to a more careful observation, and a more accurate classification of the characteristic symptoms of every case, so that he may be able to reach a reasonably certain decision as to the possibility of relief by means of operation. At the present time it certainly appears as if but a small percentage of patients who suffer from cerebral disease can be relieved by surgical interference. The most favorable results have been obtained in abscesses due to ear disease, and in sinus thromboses. It is true that some brilliant cures have followed operations for tumors, or for the relief of Jacksonian epilepsy when due to traumatism, but such results are exceptional. Reports of cases, both of failure and of success, are slowly accumulating, and as the number increases the prognosis of such operations must at least become more accurate, if not more favorable. In a department of surgery where the cases can be counted by the score only—instead of by the thousand, as in some specialties—the history of even a single case must be of interest, and often of great value.

The uncertainty of diagnosis is only one reason why results are apt to be unsatisfactory. There are three more potent reasons: first, the character of the lesion; second, its inaccessibility; and third, the impossibility of its removal without the substitution in its place of other lesions of equal or greater severity. Many cerebral tumors are either malignant or tubercular. The difficulties attending the removal of cancer in other regions apply with still greater force to cerebral growths of this character. The same difficulties, though to a less degree, apply to operations on tubercular tumors. Since the appearance, in 1889, of Bergmann's monograph on tubercular tumors of the brain, operation upon these growths has not been regarded with much favor, by either neurologists or surgeons. His objections to surgical interference in this class of cases were: first, that following the operation there was apt to be extension of the tubercular process to the coverings of the brain, resulting in a fatal tubercular meningitis; and second, that removal of the growth was apt to be incomplete, and that recurrence was almost certain and generally rapid. Recent experiences have, however, somewhat modified this unfavorable view. A number of apparent cures have resulted. In a recent article by Krönlein, fifteen cases of operation are reported. Four of these patients were permanently cured, and two were temporarily improved. The mortality was great, seven having died as the result of the operation, though in four of these the tumor had not been found by the surgeon. It must be granted that there are cases of cerebral tuberculosis which should be subjected to operative interference. They are, however, exceptional, as either general tubercular infection or advanced disease of any other single organ must contra-indicate operation. The same is true of malignant growths. A few successful cases have been reported, but we cannot expect much progress to be made in this direction. Often, however, the nature of the tumor cannot be known, and if from the symptoms it can be judged that there is

a probability of its removal by operation, an exploratory opening in the skull is certainly justifiable. The danger of this procedure is slight, and a benign tumor may be exposed.

The inaccessibility of the growth will always prove a great barrier to the successful removal of brain tumors. Tumors at the base of the brain or buried deeply beneath the cortex will always defy the operator. The damage which necessarily must be done to the cerebral tissue in order to reach them, is the factor that nullifies the operation.

A very complete account of all operations for tumors of the brain has been made by Starr. Up to 1896, he has collected 162 cases. In 48, the tumor was not found by the operator. In 7 cases it was found, but could not be removed. In 107 cases the tumor was found and removed; 72 of these patients recovered, and 35 died. Considering the hopeless nature of such cases, this mortality is certainly not excessive.

The results of operation for the cure of epilepsy have been very disappointing. In comparatively few cases is resort to surgery justifiable. It is exceptional that autopsy on such cases reveals any gross lesion within the cranium. And a favorable result is to be expected in such cases only where there is a visible lesion, so situated that it can be easily reached and safely removed. The most favorable results are to be expected in cases where there is an irritative lesion pressing on the cortex of the brain. If there is a reasonable chance that such a lesion exists, operation is demanded. For example, when the convulsions follow a traumatism, the irritant being a depression of bone, a thickened dura, an organized blood clot, a cyst, or an abscess, the chances of cure are good, provided that years have not elapsed between the time of injury and the operation. In cases of Jacksonian epilepsy without a traumatic history, the outlook is less favorable. In many of these, the lesion is one that cannot be removed by operation.

The excision of that part of the cortex which governs the affected muscles but rarely gives permanent relief. In its place there forms a cicatrix which remains as a source of irritation; indeed, after many cerebral operations, this cicatricial tissue will prevent a permanent cure. The new tissue may not at first act as an irritant, and on this account many of the reports of "cure by operation" are valueless, inasmuch as sufficient time has not elapsed after the operation to fairly decide whether or not a cure has been effected. No definite conclusion can be drawn until a year at least has elapsed. It must not be overlooked, however, that in certain cases where radical operation is impossible it is justifiable to make an opening in the skull for the relief of intracranial pressure. Such a safety valve will often temporarily relieve the symptoms, and may even permanently mitigate the violence of future attacks.

The operative technique of cranial surgery varies somewhat, according to the training, mechanical skill, and experience of the surgeon. On one point all are agreed, *i. e.* the vital importance of strict asepsis or antisepsis. Various methods are employed for exposing the interior of the cranium. The older method, according to which one or more buttons of bone are removed by the trephine and the opening enlarged by the rongeur bone forceps, is still frequently employed. If a large opening is required it can be made with greater rapidity, according to Horsley's method, by means of the ordinary amputating saw and his massive bone forceps. The employment of either of these methods, however, prevents the replacement of the bone. If it is considered undesirable to leave a permanent gap in the skull—and this opinion is entertained by the majority of surgeons—the flap method must be employed. The curved incision in the bone can be made by either the chisel or a saw working by an electric motor, and, the base being broken, a window of the desired size is made, through which the necessary inspection and manipulations can be accomplished, after which the flap is replaced. If chisels are used, hard blows must not be struck by the mallet, as serious results have been attributed to its impact. Cases have been reported where considerable shock to the respiratory and circulatory centres has been produced, and where subdural hemorrhages have resulted. If the saw be employed, this concussion is avoided, and the section is more rapidly made, but in spite of every precaution the best saw will occasionally fail at the most critical moment, and there is also the disadvantage that it is difficult to perfectly control its movements, and hence injury to the dura and brain is apt to occur. Until recently, the saws employed have been very thin, so that it has been almost impossible to see the bottom of their groove and to ascertain what depth had been reached. The blades are now made thicker, and this improvement ought to lessen the risk to the brain and its

membranes. In spite, however, of many ingenious devices of this nature, the use of the saw or burr is not altogether satisfactory. If one or other is to be employed, it is probably wiser to make with it a partial section of the skull, and complete the work with light blows of the chisel. A new instrument, combining saw and forceps, has recently been devised by Dahlgren of Upsala. He claims that he can cut out a large flap in four minutes. It is frequently, however, found that instruments will perform such perfect work in the hands of their inventors only, and the description of this forceps would not incline one to believe in the rapidity of action claimed by its originator. Horsley, whose experience is very large and whose rotating saw is one of the best, has abandoned its use and disapproves of the flap operation, as he sees no special disadvantage in leaving a permanent opening in the skull. It is certain, indeed, that patients who have large openings in their skulls suffer no inconvenience from the bony defect; still it seems wiser to restore the continuity of the cranial vault, provided this can be accomplished without subjecting the patient to additional risk. The popularity of the flap operation is increasing, but as yet there are imperfections in the technique of this method. A larger experience is needed before it can be definitely decided which of the two plans gives the more satisfactory results.—*Medical News*, April 18, 1896.

STERILIZATION OF CATGUT BY A MODIFIED CUMOL METHOD.

CLARK and MILLER (*Johns Hopkins Hospital Bulletin*, February and March, 1896), after a careful study of the method of Krönig in sterilizing catgut, found it necessary to modify that method so as to do away with the use of benzene, which is not a germicide and cannot be rendered sterile by heat without great danger. The following method was therefore adopted:

1. Cut the catgut into the desired lengths, and roll twelve strands in a figure-of-eight form so that it may be slipped into a large test tube.

2. Bring the catgut gradually up to a temperature of 80° C., and hold it at this point one hour.

3. Place the catgut in cumol, which must not be above a temperature of 100° C.; raise it to 105° C. and hold it at this point for one hour.

4. Pour off the cumol, and either allow the heat of the sand bath to dry the catgut or transfer it to a hot-air oven, at a temperature of 100° C., for two hours.

5. Transfer the rings with sterile forceps to test tubes previously sterilized as in the laboratory.

In making the catgut up into rolls, it is only necessary to tie the ends in the isthmus of the figure-of-eight to hold them securely in proper shape.

If convenient, it is better to use the hot-air oven for the drying process, but this is not absolutely essential, as a sand bath can be improvised, as suggested by Krönig, to serve this purpose.

A beaker glass of at least a half-liter capacity is imbedded three-fourths of its height in a tin or agate-ware vessel of sufficient capacity to permit three-fourths of an inch of sand to be packed about the sides and beneath the glass.

In drying or boiling, the catgut should not come in contact with the bottom or sides of the vessel, but should be suspended on slender wire supports or placed upon cotton loosely packed in the bottom.

During the drying process the beaker glass is covered with a sheet of pasteboard, through which a Centigrade thermometer is thrust so that the mercury bulb may be suspended about midway in the vessel. In this way the temperature can be regulated perfectly.

A Bunsen burner is placed under the sand bath, and the temperature in the beaker glass is slowly brought up to 80° C., where it is held for one hour, to dry the catgut. A higher temperature than 100° C. before the catgut is thoroughly dry renders it brittle. This step in the method must be carried out most carefully.

When the drying process is completed, the cumol is poured into the beaker glass and brought up to a temperature of 165° C., a little short of the boiling-point, with two Bunsen burners. A copper wire netting should be placed over the beaker glass to prevent the ignition of the cumol. This temperature is more than sufficient to kill all micro-organisms, and it is not necessary to allow the cumol to boil, which causes unnecessary evaporation (Krönig). The catgut is left for one hour at this temperature, when the cumol is poured off for subsequent use.

Cumol, which is of a clear limpid or slightly yellowish appearance when procured from the chemist, is changed to a brownish color by boiling.

The catgut is allowed to remain in the

sand bath until the excess of cumol is driven off and it appears entirely free from any oily matter. A period of one to two hours is usually sufficient to dry it thoroughly.

From the sand bath or hot-air oven it is transferred with sterile forceps to sterile test tubes, such as are used for culture media, in which it is preserved from contamination until ready for use. Small quantities should be placed in each tube, to obviate the necessity of opening them too frequently.

In conclusion, it is well to bear in mind that, while cumol is not explosive, it is very inflammable, and great care should be observed in lifting the wire screen from the beaker glass to prevent drops of the cumol from falling in the flame or on the heated piece of metal on which the sand bath rests, as it will take fire, flare up, and ignite in the beaker glass. Such an accident occurred three times in the experience of the writers.

CALCIUM SULPHYDRATE, A SAFE, EFFICIENT, AND ECONOMICAL DEPILATORY.

BRAYTON (*Medical and Surgical Reporter*, June 13, 1896) states that Boettger's paste is a perfect depilatory, and one easily and cheaply made. He first used this paste before the public clinic at the City Hospital of Indianapolis. It was the thickness of pancake batter, and was kept in a salt-mouth pint bottle, with the stopper well smeared with vaselin. It now retains its perfect depilatory power, after having been made six months.

Dr. Wishard has used it in removing the pubic and scrotal hair preceding operation. Dr. Joseph Marsee has also used it, and approves it. Such a depilatory as sulphydrate-of-calcium paste has a wide field in genito-urinary and abdominal surgery. It is antiseptic and alkaline; it is, therefore, an efficient soap and also a bleaching agent; the skin after its use is much whitened by the removal of dirt and superficial epithelium and oil, as well as by the removal of the hair. The hair is destroyed some distance down in the mouth of the follicle—much closer than by shaving. There is no more folliculitis excited than by ordinary close shaving. Any vigorous scrubbing of the skin with soap, followed by shaving, will open up the follicles, particularly on the back of the neck, to the entrance of cocci, and may be followed by a mild folliculitis or even furunculosis. A dusting powder of stearate of zinc may be advantageously used after the depilatory has been washed off in abundant water and the skin well dried.

The writer has applied the paste directly with his fingers and palms, as one would do in washing the arms with soap. But after using it in this way experimentally on several persons, he found the skin on the tips of his fingers and the ends of his nails softened and tender. A swab would be a safer method of applying it where one uses it frequently.

This paste is very efficacious in ringworm of the scalp. The hair can be cut close, the paste applied, washed off, and followed by the selected parasiticide.

Hypertrichosis of the chin and lip, scattering hairs, moles, etc., he treats with the negative needle of a small galvanic battery, according to the method of Hardaway. But if one has a patient suffering with hypertrichosis, the use of this paste once a week or once in two weeks will be safe, economical, and efficient.

Finally, it may be used to cleanse the hands and arms of the abdominal surgeon of hair and deep-seated filth in the follicles, from the finger-tips to the elbows, before laparotomy. The hair will grow again and require removal in from two to three weeks.

Calcium sulphydrate is made by passing sulphuretted hydrogen through a thick cream of well slaked lime till the lime will absorb no more of the gas. The paste thus made is moderately caustic.

RESECTION OF THE BLADDER.

KUESTER reports two cases of resection of the bladder (quoted by *La Médecine Moderne*, No. 49, 1896), both successful. The first case was that of a man aged forty-one years. There was a papillomatous tumor in the right ureter, which grew so rapidly that operation was required. Hypogastric cystotomy was performed. The extremity of the right ureter was divided, the tumor resected, the ureter freed and drawn up to the superior vesical wall, and the bladder and abdominal wounds closed. Recovery was prompt.

The second case was that of a tumor on the right side of the bladder. On opening this viscus the growth was found to be the size of a fist. The ureter opened in the upper portion of the tumor. The peritoneum was detached from the posterior bladder-wall, the latter was resected together with over an inch of the ureter, and this canal was then sutured to the upper portion of the bladder. The patient promptly recovered.

Correspondence.

LONDON LETTER.

By St. Clair Thomson, M.D., M.R.C.P., F.R.C.S.

We are in the month of congresses, and those of us who are forced to imitate "the gentlemen of England" and "sit at home at ease" have at least plenty of reading matter placed before us to while away our vacation leisure. For some time past it has been the custom to poke fun at these scientific picnics, and certain individuals have even obtained a specious kind of reputation by ostentatiously parading the fact that they consider such palaver meetings far below the level of their notice. Certain it is, also, that the confusion and want of organization in certain congresses which need not now be particularized have fostered the notion that the palmy days of congresses were over, and that nothing was to be expected from them but much cry and little wool. I venture to think that the recent International Congress of Dermatology, which has just concluded its session in London, will do much to recover the reputation of such gatherings. It was in the widest sense of the term representative, including such names as Kaposi, Besnier, Lassar, Hallopeau, Unna, Schwimmer, Tarnowski, Neissea, Campana, Di Amicis, Sabouraud, amongst the visitors, with Malcolm Morris, Radcliffe Crocker, Payne, Stephen Mackenzie, Colcott Fox, Pringle, Jamieson, and others on the organizing committee, and presided over by the veteran Jonathan Hutchinson. When the work done is placed before the profession, it will be seen that it was not of the mere *réchauffé* character one so often meets with, but that a vast amount of original work has been done with the express purpose of having it tried before this grand jury of dermatologists. As an onlooker I have little hesitation in saying that this last has far outstripped all preceding skin congresses, and that while much is due to the excellent way in which the dermatologists of London have worked together, the burden and heat of the day has been most admirably borne by the Secretary-General, Dr. Pringle. The particular feature of the gathering was the show of clinical cases; the abundance of rare cases was indeed remarkable, and it is a comfort to general practitioners to know that many of them remained undiagnosed! I was surprised to notice how few representatives there were from the States. I noticed Dr. Nevins Hyde of Chicago, and Professor White of Boston was one of those who responded to the toast of "Distinguished Visitors."

Although not present at the meeting of the British Medical Association in Carlisle, I observe that the quality of the communications made to it was also more than up to the average. As they appear from time to time I will send you the gist of anything striking. There was no therapeutic section, so that there are practically no novelties to record in your particular department. I should say that a note struck at the meeting was the beginning of a slight revolt against the autocracy of the laboratory, and its inefficiency in practice (by itself) was well shown in Sir Dyce Duckworth's address on "Prognosis." The same refusal to bow down to "pure science" is shown in the introduction to the System of Medicine, edited by Dr. Clifford Allbutt, and referred to in my last letter. The editor of this latest system therein says:

> The merely scientific physician is apt to be blind to useful manœuvres which rest rather upon the accidental than upon the more permanent qualities of things; indeed, the practical man often sees more of the surface of things than does the analytical man, and thus keeps more of the sense called "common." So it comes about that, in practice, personal tact and character are as important to the operations of a physician as scientific equipment. He has to deal with men of limited vision, full of accidental qualities, and subject to accidental disturbances; and the tact which deals with these confused and conflicting attributes is born rather of a wide survey of the outside of things, and of transitory conventions, than of a penetrating insight into causation. Excessive concentration, if it fit a man for analytical study, may unfit him for the world.
>
> Moreover, the purely scientific physician tends to undervalue opinion, as the man of the world to overvalue it.

However, that it is not science which is to blame for this, but the method of imparting it, is shown by a recent and much appreciated address of Mr. Pridgin Teale's, in which he observes:

> The burdening of the memory with mere facts which have no direct or obvious connection with science or practice—with facts, that is, unassociated with ideas of practical utility—is on the whole of little value educationally or otherwise, and such facts make but a transient impression on the memory. Indeed, the examinations in each subject of professional study should be restricted to the general principles and the more important facts of the science, and should be of such a character as to induce students in their preparation for it to observe and think for themselves more than is now commonly the case.

Now a temperate and well reasoned counter-blast arrives seasonably from Dr. Delépine. In a paper on "The Place of Pathology in Medical Education," he shows that the

conditions of life are so complicated, especially in the case of civilized man, that a mere superficial examination of natural phenomena, by means of our unaided senses, would seldom have led to more than rough guesses regarding the causation of disease. He drives this statement home by pointing out that it is not many years since there was a general belief in the production of frogs out of mud, of maggots out of flesh, of micro-organisms out of infusions, and that even in this century it is only by very carefully planned experiments that it has been proved that life, as it is known to us, is invariably a continuation of pre-existing life. To some clinicians who may sneer at the pretensions of science he points out that, as a matter of fact, they constantly make use of results obtained by scientific workers: they often use tests for sugar, albumen, blood or bile in the urine, elastic tissue or tubercle bacilli in the sputa, various parasites in the skin; they may even look for worms or protozoa in the blood; they will not scruple about recommending the use of anesthesia, of vaccination, of anti-diphtheritic serum, of antiseptic or aseptic dressings, of boiling of milk, of disinfection of rooms; they will know how to stop arterial and venous hemorrhage; they may prescribe such drugs as morphine, pepsin, nitrite of amyl, and take advantage of the ophthalmoscope, to say nothing of the X rays, and so on. These methods have not been elaborated at the bedside, for the bedside is not the place for prosecuting researches which might involve danger or even serious discomfort to the patient on no other ground than mere fancy.

Professor Delépine holds that long discourses on purely hypothetical matters are of little use to the student, as they foster in his mind the habit of doubting the value of scientific work at a time when he is not able to judge of the value of arguments. In fact, students would obtain a more useful knowledge of medicine if they had fewer lectures and more practical courses. His conclusions on this point are so valuable that I cannot do better than give them *in extenso*. Speaking of students he says:

> They should be made to attend thorough practical courses on (1) pathological anatomy, histology, and chemistry; (2) bacteriology as applied to the study of infectious diseases; (3) general clinical medicine and surgery, with special courses in special branches of clinical work such as diseases of women and obstetrics, diseases of children, infectious diseases, mental diseases, diseases of the eye, of the ear, of the throat, etc.
>
> Systematic lectures should be confined to courses on (1) etiology of disease and pathogenesis; (2) general considerations regarding the practice of medicine and of surgery. These courses should be as short as is compatible with a clear exposition of those principles which but very few students would be able to formulate for themselves from the study of facts.
>
> Finally, I wish to say that if, in expressing my views, I have wounded the feelings of any who have opinions differing from mine, I will ask them to apply to me the words of Harvey: "I would not charge with willful falsehood any one who was sincerely anxious for truth, nor lay to any one's door as a crime that he had fallen into error."

Amongst the post-prandial utterances at Carlisle, I notice that the bishop of that diocese wittily turned the laugh against the profession which chiefly composed his audience. He was asked to reply to the toast of "The Clergy, including Ministers of Other Denominations." He entered a joking protest against being coupled with those whom, from his point of view, he must needs regard as "irregular practitioners," and pointed out that his position was analogous to that of a medical man who might be asked to respond for his fellow practitioners, as well as for herbalists and such like.

I regret to notice that another divine has been distinguishing himself in a less commendable manner. The Bishop of London is reported to have said that the teaching of science in elementary schools is "a very great evil," and he resents the idea that little children should be taught that thunder is a perfectly natural and explicable phenomenon. In spirit he is therefore at one with the present head of the Vatican. The Pope has recently nailed to the gate of St. Peter's at Rome his "Index Expurgatorius" for the year, and in this fairly bulky tome are included the works of Lombroso and several treatises on the subject of criminal anthropology. In referring to this, the *Lancet* recalls the following excellent story: Benedict the Fourteenth, or Macaulay's "favorite Pope" according to Trevelyan, was once asked by a nephew who wanted to follow in his uncle's footsteps what books he would recommend as best adapted to fit him for such a career. "You could not have consulted a better authority," was the Holy Father's reply. "Every year I make a list of the publications which are in all respects most worthy of perusal, particularly by aspirants such as you," and therewith handed him the last "Index Expurgatorius." The saying was even more wise than it was witty.

It is always interesting to try and "see oursels as ithers see us," and hence I frequently quote the public utterances of well

known men with regard to our profession. Lately Judge Vaughan Williams declared that there was a considerable affinity between the professions of law and medicine. Both required the same qualities, both were the recipients of confidences from their clients, and he would add that the clients rarely found their confidences misplaced. He, as a lawyer, often came into contact with doctors in the law courts, where the most important issues were often determined solely on the evidence of medical experts, who were for the most part safe guides in the administration of justice. One point, however, in which the professions differed, was that the medical profession was essentially progressive, while the legal profession was in a sense stationary. If the doctors of the last century came to life again, they would know comparatively nothing of contemporary medical science, but if the judges of former times were installed in the law courts to-morrow, they would try the cases quite as well, if not better, than the judges of to-day.

Amongst other events of this Congress month must be recorded the International Congress of Homeopathy. Although the city papers gave considerable more prominence to it than to the Congress of Dermatology, which was sitting at the same time, I was unable to find that the followers of Hahnemann brought any contribution to the elucidation of the study and cure of disease. Quite the majority of their papers were taken up with a review or a defense of their peculiar tenets.

It is more amusing to turn to the report of a Congress of Medical Herbalists, in Hull. The president announced that they should "defend themselves against the common enemy, and should act in order that they might obtain for their branch of the healing art that assured position which they deemed needful for their future welfare. The laws needed to be widened, so as to admit all schools of medical thought." It is a relief to read that the total of herbalists at the congress only reached thirty-four, so that probably in this direction the laws will widen slowly.

We have all learned some physics in our time; at least we have had to pass examinations in the subject; and although the latter in no way entails the former, it at least made us familiar with "Grove's battery." The inventor of this has recently died, and to many it will be a surprise to hear that he was a distinguished lawyer and judge, and that he found time apart from his legal duties to make several discoveries in electricity and optics, giving many contributions to scientific literature, including his famous work on "The Correlation of Physical Forces." The judicature thought to turn his scientific learning to practical value by giving him all the patent cases to try; but I hear that in this he was considered a failure. His interest in the scientific bearing of the question which might be submitted to him was so strong that he was apt to judge cases on the merit of the invention and not on the legality of the patent! He also consumed much of the time of the court in explaining to the litigants how much better they might have made their inventions! He had indeed a thoroughly scientific mind, and one cannot help thinking that he would have done much more valuable work if he had devoted himself entirely to science.

A verdict has lately been obtained which, if upheld, will enable us to do with very little more sanitary legislation. At the Birmingham Assizes a special jury did the work of many Acts of Parliament by giving tremendous damages against a "local authority" which had poisoned a citizen by sewer gas. The citizen was a Mr. Smith, and an action was brought on behalf of his widow and six children against a rural District Council whose sewers were found to "ventilate" into his house. This, it was alleged, gave him typhoid fever, whereof he died. An entirely unsolicited supply of sewer gas to Mr. Smith's premises was cut off, some time ago, by order of the District Council. But the work was done in a slovenly way; and it was held that the leakage accounted for the disease. The plaintiffs claimed $50,000; the jury gave them $17,500. An effective penalty like this will make "local authorities," in vulgar parlance, "sit up," and will show that sanitary legislation is not a mere expression of opinion.

With regard to the adulteration of foodstuffs, it is a satisfaction to read that legislation and improved methods of analysis have between them almost reduced this source of chronic poisoning to a minimum. Some ten to twenty years ago the adulteration of food was looked upon as so general that the jokes of the period reflected the popular and not ill-founded opinion. Grocers in those days were always credited with having made their fortunes by "sanding the sugar," and the cheapness of marmalade was accounted for by the abundance of the turnip crop. The

latest returns show that either because the original article is produced so cheaply (as in the case of tea), or because the analytical chemist has discovered unfailing tests, the reign of the adulterator is ended. In only two branches does he continue to evade the law. No trustworthy tests have yet been discovered to distinguish between butter and milk which have been artificially diluted, and the same products when coming directly from ill-fed cows.

We are rather apt in this country to think that we take the lead in sanitary matters. Judged, however, by the annual death-rates, we only come second. Sweden takes the first rank in Europe, with a mortality of 16.8 per 1000 per annum; in England it is 19; in Belgium 20.5; in Switzerland 21.4; in France 22.4; in Prussia 24; and in Italy 25 to 26. Austria, Russia and Spain are simply "out of it." To those who care for this subject and are not afraid of figures I commend the Registrar-General's Decennial Supplement. It is a rather bulky volume, but it only comes once in ten years. This, too, is my excuse for gathering some facts from it. It appears that the general death-rate has fallen from 21.3 per 1000 in the decade ending 1880, to 19 per 1000, and there is diminished mortality even between the ages of forty-five and sixty-five, where in the earlier decade there was a rise, generally attributed to the growing severity for elderly people of the struggle for life. Infant mortality shows but slight improvement. On the other hand, mature lives would appear to be prolonged. The average expectation of life at birth of males used to be 39.9 years, and of females 41.8 (1838–1854); this rose in 1871–1880 to 41.3 years for males, and 44.6 for females; and for the decade ending in 1890 it is further raised to 43.6 years for males and 47.2 for females. It would be well if insurance companies would lay these figures to heart and reduce their premiums somewhat. Amongst the various causes of death, I note that phthisis has diminished, while measles and diphtheria have increased. Cancer is spreading, and heart disease and renal disorders show the results of the strain of city life. The destructiveness of town existence is shown from the figures which indicate that for 10 people who die in rural England, over 13 of the same sex and age would die in the large towns. If 100 is taken as the average of the country, it is seen that in a county of manufactures like Lancashire the death-rate is 126, while in the eminently rural county of Huntingdon it is 73. In other words, a rural population dies only half as quickly as one given up to mines, mills, and factories.

The question of the spread of syphilis—at least in the army—is sure to force itself on public attention if things go on as at present. Even the *Times* has a notice from its Indian correspondent, who refers euphemistically to "certain forms of contagious disease" which are growing more prevalent in the army every year, while the type of disease is getting more severe. The returns for the last year show that the admissions into hospital from this cause have risen to 531 per thousand, that nearly 4000 British soldiers are incapacitated for duty at the present time from the disease, that others from the same cause are unable to stand the strain of a campaign, and that "one-seventh of the whole British garrison may now be taken as ineffective in case of war." When it is recollected that with our short-service system these soldiers are constantly returning to take their places as citizens, while recruits quickly fill the ranks —and also the hospitals—it will be realized how far spread is this devastation.

The outbreak of smallpox with which Gloucester celebrated Jenner's centenary in his own county is now, I hear, at an end. From one of the papers read at the British Medical Association it appears that the most vigorously vaccinated country in the world is Germany. Not only must every child in the empire be vaccinated within a year of birth, but he or she must submit to re-vaccination at the age of twelve. Soon after the enactment of this law the death-rate from smallpox fell to between 0.34 and 3.6 per 100,000 inhabitants; whilst in Austria, with no such law, in the same years the death-rates from smallpox were from 5 up to 50 and 78.8 per 100,000 inhabitants. In 1878 there were no deaths from this disease in the German army, and 15.4 per 100,000 men in the Austrian army. During the last decade the mortality from smallpox in Germany averaged only 7 per million inhabitants; in Austria, 580; in Belgium, 441. The reader of this paper suggested that if the German plan were adopted here, and every child vaccinated at birth and again at the age of twelve, we could rid the inhabitants of these islands of the scourge of smallpox. It was also held that as animal lymph "took" with as much certainty as human, and was free from all suspicion of causing syphilis, it should be employed if only for the purpose of overcoming prejudice.

The Royal Commission on Vaccination has at last held its final meeting, and after its report has to-morrow been submitted to the Queen, it will be made public. Meantime various reports are circulating with regard to it. According to a city paper the report may be roughly divided into three parts. In part one the commissioners are unanimous. Part two contains recommendations of a majority of the commissioners; and part three is the report of a minority of four.

Part one (says our contemporary) deals with the question exhaustively from a historical and pathological point of view. Vaccination is, on the whole, approved, but with reservations calculated to cause some astonishment amongst those who have not perused the volumes of evidence already published. This part winds up with a unanimous recommendation that the operation of vaccination should not be insisted upon when a parent makes a written declaration of his objection to it. In part two a majority of the commissioners recommend certain new methods of procedure, transfer of the vaccination business from boards of guardians to sanitary authorities, use of calf lymph, etc. In part three the minority wholly discountenance any State or public interference with a parent as regards vaccination.

This is quite unofficial and may be entirely wrong, but it tends to confirm what has been a common belief for some time past, namely, that the evidence collected was so strong against compulsory vaccination that the commissioners were loath to publish it. Anyhow, to all parties it is a comfort that this long-drawn-out Commission has at last closed its seven years of investigation.

Sir Willoughby Wade is of opinion that there is a very high degree of probability that rheumatic fever does depend on microbic poison, and that, as the point of absorption is most likely the throat, practitioners should attend to the disinfection of the throat in rheumatism, however slightly it may be disordered, and however slight the rheumatic symptoms may be. He gives as one of the best gargles:

℞ Mellis, ʒ iv;
Lotio nigr., ℥ viss.

The sprays he has found most useful are:

℞ Zinc. sulpho-carbolat., gr. iv;
Aquæ, ad ℥ j.

and

℞ Acid. sulphuros., ʒ j–ij;
Aq., ad ℥ j.

As an insufflation:

℞ Salol,
Sodæ bicarb., of each, grs. iij–v.

The spray should be directed through each nostril as well as through the mouth.

The danger of giving a patient a prescription of cocaine, even for external use, is well shown by the record of a case by Dr. Zangger, of Zurich. A lady had for eight years been in the habit of taking chloral in doses of twenty-five to thirty grains every night, to procure sleep. Owing to some trouble connected with sensitive gums, a physician gave her a lotion of cocaine for external use, forty-eight grains to two ounces, which so effectually soothed the patient that for two years she continued to apply the lotion to her gums, and probably also to swallow small quantities at a time. In this way she got through thirty grains a day. There was no reason for any such application, and she was reduced to a mere wreck with nervous prostration. Restraint was impossible, and although traveling on the Continent she could always procure an ounce at a time from a London drug store.

Some time ago I mentioned the question of a memorial to Keats to be erected at Guy's, the hospital which he "walked" for some years. It is now proposed to raise enough money to endow a bed in memory of him whose name was, as he himself thought, "writ in water."

I recently suggested that the British Climatological Society would have an uphill business in attracting attention to the advantages of British health resorts, but I referred more to the social than to the strictly climatic view of the question. I notice that in Clifford Allbutt's System of Medicine the climate of England is thus summed up by Drs. Hermann Weber and Michael Foster:

> We must acknowledge that the climates of England are rather moist, that the air is often dull and sunless, that rain falls on comparatively many days and is distributed over many hours, that the wind is often high and chilling, and that the shelter is limited. On the other hand, the hygienic conditions are better than anywhere else, the food is good, and the separation from the family is less. The climates of England belong to the most health-giving climates for the fairly vigorous, but are less good for the delicate invalid. If, however, a delicate person is obliged to stay at home or near home, it is often possible for him by judicious management to obtain great benefit by availing himself of all the advantages and defending himself from the injurious influences of the home climates.

The use of warm normal saline subcutaneous injections in cases of collapse from hem-

orrhage is well known. It has recently been recommended to make the injection into the loose areolar tissue of the axilla; and while it must be agreed that this is a most convenient spot, there are others who hold that in sudden and desperate cases, such as occur in midwifery practice, it is quicker to give the injection per rectum, a method which is not objected to by the patient or her friends and which is quite as effective. It can be administered with an ordinary enema apparatus, and the instruments for the subcutaneous injection are seldom at hand when required. In any case the fluid injected consists of a teaspoonful of table salt to twenty ounces of tepid water that has been boiled.

Many have deplored the insecurity of the varying strength of antitoxic serums sent out by various manufacturers. The *Lancet* has therefore done good work by instituting a special commission to investigate the relative strengths of the various antitoxic serums at present on the market. The results in some cases are certainly startling, for it appears that certain serums are far below their advertised strengths. Those from the laboratories of Behring and Schering are found to be much nearer the standard than certain ones of British manufacture. It is already suggested that this discovery may help to explain why the results obtained in England with the antitoxin have proved less brilliant than those recorded by German observers.

ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, JULY 27-31, 1896.

(By a special correspondent.)

CARLISLE, ENGLAND.

We have had a most pleasant and interesting gathering, and if our number has been small it has only enabled us the better to appreciate the British hospitality which has been more than free—it has indeed been lavish. After the monster meeting in London last year the Association, probably for the first time in its history, was left without an invitation for this year's meeting, every other city in the kingdom being a little shy of having comparisons made with the great metropolis. All the more credit is therefore due to this Border city for the warmth of the reception given by its 50,000 inhabitants to the 650 members and visitors who have spent the week here.

These functions are generally headed by an address by the President and by general addresses in Medicine, Surgery, and occasionally in some other subject, such as Pathology, Obstetrics, or Public Health. The President for the year is always a local celebrity, and Dr. Henry Barnes of Carlisle selected for his discourse "The Medical History of Carlisle." The other addresses are not neces sarily given by local men, and hence we had the opportunity of hearing a most able discourse from Sir Dyce Duckworth on "The Prognosis of Disease." Out of his ripe experience this scholarly physician gave us a gleaning which should be read and pondered by every practitioner. He first pointed out that "our minds have been much, probably too exclusively, intent on acquiring accurate knowledge of facts, and we are now encumbered with a mass of details and microscopic minutiæ, so large and so pressing that few amongst us have had time for a meditative survey of them in order to apprehend the great general laws which underlie and govern them. Our views are thus apt to be narrow and distorted; we argue too much from the particular; we fail to see things in due proportion, and so, less seldom than we might, have a wrong judgment in things medical.' Hence we must "sometimes lift our eyes from the microscope and away from the engrossing researches of the laboratory;" in fact, we must try to obtain larger vistas and strive to acquire some of that insight into a sick man's condition which a huddled heap of facts alone is not sufficient to give us. Our forefathers were perhaps stronger in this branch than we are, in spite of our increased advantages for exact observation, and it must be granted that we are apt to dwell too much on our detailed notes and our manifold instrumental aids, and too little on the patient, his personal peculiarities, and the intimate nature of his ailments. This is well shown in life assurance work, where the examiner is too busy with pen and ink and instruments to gauge the real inwardness and pregnant points of the case. This expression "inwardness" is one which Sir Dyce employed more than once in his address, and it will suggest the trend of his thought.

Although I fear they will read like a collection of "tips," I cannot refrain from giving some jottings I made of his remarks. *Inter alia* he pointed out that obese and elderly patients are bad subjects for all fevers and acute diseases.—The existence of chronic renal disease is incompatible with recovery from continued fevers.—In enteric fever preg-

nancy is always a grave complication, and abortion is common; epistaxis is not serious unless profuse; an abundant crop of papules does not denote any special gravity, and, *per contra*, absence of eruption certainly affords no ground for belief that the case is a mild one; excessive diarrhea is unfavorable. In the other exanthemata, prognosis is graver according to the early age of the patient and the abundance of the eruption.—Our recent experiences of influenza have taught us the special dangers of the peculiar pneumonia of that malady in the case of persons past middle life, and of the grave cardiac asthenia that may long persist.—The prognosis of diphtheria is better than was the case twenty-five years ago; the disease is exceptionally dangerous for children under two years of age, and although the outlook is better since the introduction of antitoxin, still, as Sir W. Jenner always said, "no case of diphtheria is unattended by danger." Nasal diphtheria should always excite concern. Vomiting, epistaxis, a rapid or infrequent pulse, and delirium, are all bad signs in this disease.—With reference to some chronic infectious diseases, he pointed out that pulmonary emphysema, asthma and chronic bronchitis delay the course of tuberculosis. Diarrhea, due to tuberculous enteritis, occurring in the course of any case of phthisis, is of the worst omen, and no less so is the onset of laryngeal tuberculosis. When aphthous stomatitis occurs at the end of any chronic or exhausting disease, it justifies our warning the patient's relatives that the powers of life are rapidly waning.—With regard to diabetes, the younger the patient the worse the prognosis; the course is also more acute in lean than in fat patients. Recovery from the coma of diabetes is almost unknown, although when threatening it may be averted by purgation with castor oil.—In rheumatic fever, if the seventh or eighth day be passed and no cardiac complication has supervened, we may not expect the occurrence of any form of carditis, or of pericarditis; but if a relapse occurs we may meet with this as a manifestation of the fresh attack. The younger the patient the greater is the risk of heart trouble, and this particularly applies to females.—Cancer of the liver is usually fatal within twelve or fifteen months, but sometimes a rapidly growing tumor will carry off a patient in a few weeks.—Cancerous growths of the peritoneum commonly kill within a year.—Pneumonia supervening in patients with pulmonary emphysema is fatal.—With regard to the once much discussed *arcus senilis*, it is more a diagnostic than a prognostic sign of vascular degeneration; by itself it is no sign of grave import; it may begin in the third decade of life, and death not occur for fifty or more years subsequently, whereas extreme arterial decay may be present and in progress without this indication.—In locomotor ataxia no absolute cure is to be expected, though life may be prolonged for many years; arrest is more apt to take place in those cases which set in violently.—As regards the recognition of impending dissolution, we should bear in mind that in pulmonary phthisis and cancer of the stomach we meet with the most protracted fatal issues. In poisoning by strychnine and in rapidly spreading peritonitis, as after rupture of gastric ulcer, the unwary may be misled as to the certain fatal issue (unless modern surgery is promptly invoked) by the perfect mental clearness of the patient up to the last moments.

Such are some of Sir Dyce Duckworth's suggestions for making our art in the highest and best sense practical; and they were conveyed in a manner which was concise without being tedious. In conclusion he commended us to bear in mind that no signs are invariably to be relied on, and that we should do well to make free use of the cautious word "if." This rather reminded me of the 'cutest practitioner I ever knew, who was in the habit in serious cases of telling the friends that the patient would recover if he would continue taking nourishment! This was always encouraging, and the doctor was sure of a score whatever turned up.

The address in Surgery was given by Dr. Roderick Maclaren, the surgical chief of the local hospital—called, after the county in which we are, Cumberland Infirmary. The very title of his discourse sets one thinking, for he took as his subject "Preventive Surgery," and one is inclined to ask if there is such a thing at all, and if we are not beyond the "preventive" stage when we have to invoke the aid of the knife. However, I am not here to criticise but to report, and will therefore give the Doctor's own views of the matter. He defined his subject as "surgery in which treatment or operation is entered upon or undertaken for some risk or sequence which we expect to result from an existing condition, and not on account of what is actually present at the time." Under this rubric he not only included such proceedings as the removal of adenoids and tonsils as a preventive measure of ear disease, deficient aëration, etc., but also such operations as

radical cure of hernia, treatment of enlarged prostate, appendicitis, depressed fracture, etc. He pointed out that even thirty years ago it was given as a dictum, "Beware of operations of convenience." It was alleged that such were attended by a greater mortality than operations of necessity; nature was endowed with the power of accommodating itself to the inevitable, but of resenting mere expediency. The orator pointed out that this view was mistaken, and arose because death or ill-doing was more striking when occurring in instances where operation was not a necessity. He attributed the evolution of his subject entirely to the discovery of anesthetics; and here I must deplore that he did not give more prominence to the much greater discovery by his own countryman, for Dr. Maclaren himself said that "a preventive operation should be devoid of risk to life, both at the time and during the healing stage," and without the principles of Lister to guide us this would have been utterly impossible in spite of anesthetics. Dr. Maclaren holds that the guillotine operation for the removal of tonsils should be reserved for those cases in which the tonsil is attached by a distinct neck; otherwise he prefers to give the patient a deep anesthetic and deliberately cut out—or, still better, with a blunt director tease out—the whole structure. Everybody who has a chronic suppurating ear goes about in deadly peril; every discharging ear which does not get right by treatment should be operated on. Some form of complete "mastoid operation" should be carried out. In the general prevention of surgical disease he holds that we do not sufficiently appreciate the harm of slight persistent contamination of the air we breathe; hence a plea for fresh air and a sharp lookout for sewer gas. He points out that the besetting sin of surgery is that it has a narrowing tendency, and concludes with these words: "We need to put into our work all our knowledge and thought. Superficiality means failure. The human interest of all we do is intensely absorbing, consequently there is just the risk of looking upon surgery as a thing by itself, of losing our sense of its true place and proportion, and confining our thoughts within a groove of little breadth. In preventive surgery we have a tendency in an opposite direction. This tendency not only brings us into immediate contact with what the physician and general practitioner is thinking and doing, making our life and work a portion of the vast organization for the prolongation of existence, the diminution of suffering, and the prevention of disease, which we are proud to consider as the reason of our existence; but it still further associates us with the great mass of scientific and intellectual advancement which is outside the limits of any profession, of any nation, and of any time."

I have dwelt so long on these two interesting communications that I can only touch on a few points that I picked up when going around the various Sections. Dr. J. A. Campbell, the medical superintendent of the county asylum, in opening the Psychological Section described the effects of small landed properties on their owners as regards the production of insanity and the general degeneration of the race. He said that to be tied to a limited patch of ground in, perhaps, a remote district, without scope for improvement and with little time or opportunity to meet with fellow men or women, except in one's own limited area, must have a generally benumbing influence and prevent mental improvement if not actually cause mental degeneration.

The X rays were well to the fore, the discovery of Roentgen having been made public only since the last meeting of the Association. A skiagraphic laboratory was fitted up, and demonstrations were continually being given by Mr. Sydney Rowland, who pointed out that the extraordinary reports as to the efficacy of the rays were much exaggerated, and calculated to do harm rather than good.

In connection with a discussion on Cretinism, Dr. Ruston Parker exhibited by the aid of a lantern between fifty and sixty photographs of cretins. It was stated that no other disease existed, the treatment of which lent itself so admirably to photographic display; and that the treatment of cretinism by thyroid extract was undoubtedly one of the greatest triumphs of modern medicine.

A full debate took place on the subject of the Nauheim Treatment of Heart Disease, which is very much to the front here at present. On the whole, members appeared favorable towards it, needless to say when administered in suitable cases. It was curious to observe that a visit to this German health resort appears to have a strengthening effect on one's faith in the efficacy of its waters. The skeptical ones were mostly amongst those who had never visited Nauheim; they questioned the possibility of a cardiac area being as much reduced as certain diagrams would lead us to believe. Not that any imputation was cast on the good

faith of the makers of these diagrams, but it was frankly suggested that their ardor overbalanced their unbiased observation. In connection with this, Dr. B. Thorne gave a demonstration in the wards of the Cumberland Infirmary on the movements and baths used in the "Schott method" of treating heart disease.

In the Section of Surgery the whole question of the Surgical Treatment of Prostatic Hypertrophy was ably and exhaustively reviewed. Mr. Reginald Harrison confined his remarks to the treatment of prostatic hypertrophy by vasectomy. He has apparently had a larger experience of this operation than any other surgeon on this side, and his results have been encouraging, for out of ten cases of bilateral division of the vas deferens, five received great (and Mr. Harrison believes lasting) benefit. Mr. Mansell Moullin thought that in advanced age, when the sentimental objection to castration had ceased to exist, it was an operation to be advised in suitable cases, but that in earlier life prostatectomy was to be preferred if the condition of the patient was satisfactory enough to allow of such an operation. Dr. Sandberg, of Bergen, spoke in favor of castration or of ligature or division of the vas deferens. Professor Cameron, of Toronto, related his experience of bilateral castration, gained in operation in nineteen cases: one patient died from suppression of urine, and in two others mental symptoms developed; in one of these latter cases an extract of fresh testicle of the sheep was administered, as had been suggested by Brown-Séquard, and improvement quickly followed.

The province of medicine has been further raided by the surgeons. Dr. Lauenstein, of Hamburg, in a paper on Subphrenic Abscess, said that he emphatically considered that such cases should at once be handed over by the physician to the surgeon for operation. However—perhaps to soothe the ruffled feelings of the physician—he held that afterwards the patient should be returned to his medicine man for the administration of tonics and the regulation of diet!

Dysmenorrhea was discussed in the Section of Gynecology, and while dilatation by graduated metal sounds was lauded for the relief it secured, it was held that in certain cases benefit accrued from rest, hot vaginal douches, tampons of ichthyol and glycerin, and saline aperients. Morphine and alcohol should never be recommended. Bromides, belladonna and cannabis indica were recommended, and viburnum (both prunifolium and opulus) were excellent sedatives. Other speakers laid stress on constitutional causes, and of course the "bike" came in for its share of praise.

In one Section a layman, the Secretary of the Charity Organization Society, enlarged on the abuse of the out-patient department. It appears that in the course of a year more than a million patients seek and obtain practically gratuitous relief in the out-patient room. When we consider that the population of London is four and a half millions, it is sufficient to note that practically one in four of its inhabitants makes use of its charities. It is not for me to enlarge on the injustice to the charity and the profession wrought by this sort of thing; reform, like charity, should commence at home. In another Section Dr. Laffan stated that a Dublin hospital had received within its walls for a long time a man who died worth over $700,000!

"Counter Prescribing" was the subject of a paper contributed by Dr. George A. Bateman (London), who said that if the medical profession all over the world were pooled they would unanimously condemn the practice of medicine by chemists and druggists. The examinations for a registered chemist were never intended to be examinations in either medicine, surgery, anatomy, or pathology. He quoted cases of incorrect diagnosis. Counter prescribing was becoming very general, and a series of successful prosecutions under the Apothecaries Act would do good by bringing this matter to a practical issue. Medical men must, however, expect pharmacists to retaliate by proceeding against the members of the profession who kept dispensaries to sell opium or any scheduled poisons. Before enforcing their legal rights the Association should approach the Council of the Pharmaceutical Society and ask them to use their moral power in restraining their licentiates from breaking the law and infringing the rights and privileges of the medical profession.

The Section of Ethics was the only one where the personal and immediate interest in the questions discussed inspired debates that were more noteworthy for their warmth than for their increase to truth. One member held forth on "Local Organization of the Profession," and urged that they who were slow to learn the lesson of trades unionism must combine if they looked for any prospect of improvement. With unity and additional powers they might live to see the medical

practitioner more honored in his career and better rewarded for his services. Another speaker referred to the British Medical Association as the most helpless, hopeless, and futile organization ever seen in this world. It reminded him of a huge whale stranded on the sands, incapable of doing anything but flap its tail! With regard to this, I noted that the Association now numbers 16,332 members, that its annual receipts amount to about twenty thousand dollars, and that its reserve fund is between $250,000 and $300,000.

It would be impossible for me to give a clear report of the general business meetings without understanding the exact "inwardness"—as Sir Dyce Duckworth would say—of its political parties. Evidently it was expected that there would be "shillelahs and wigs on the green," as Mr. Lawson Tait had a motion on "the desirability of an alteration in the government and executive of the Association." However, things passed off fairly peaceably, and I understand that a *via media* has been found between the reformers and those who stand by the old ways.

It will be of more interest to your readers if I say something of next year's meeting. A cordial invitation has been received from the Montreal Branch to hold the next meeting in that city, and this invitation has been accepted. The President on that occasion will be Prof. T. G. Roddick, Professor of Surgery in the McGill University. In 1897 there will be an international exhibition in Montreal held to celebrate the landing of Sebastian Cabot on Canadian soil, and it is proposed to arrange matters so that members from this side can attend the congress of the British Association for the Advancement of Science at Toronto and then go on to the meeting of the B. M. A. (as it is briefly called here) at Montreal. At first sight it struck me that this would interfere considerably with the plans of those of us who had intended visiting Moscow next year, but on suggesting the fact that the events would clash I was met with some observations which showed that the officers of the Association had no great desire to oblige their Russian confrères after the reluctant way in which English had been admitted as one of the languages at the Muscovite congress. From others, however, I heard that the choice of a meeting-place outside the British Isles was for "political reasons"—the politics, I hasten to add, being not of an international character, but strictly of a British-Medical-Association nature. Indeed, it would appear that so many connected with the greatest medical society in the world have had their feathers ruffled during the past year, and at this last annual gathering, that it is thought well to have an interregnum before they once more meet together on their native soil. I give this as mere gossip and therefore only worth an *on dit*. Anyhow, there can be little doubt that the Montreal meeting will be a brilliant one. Our Canadian cousins are already preparing for it, and will give a hearty welcome to their kith and kin from the States and from the old mother country. Several were over here forming the committee charged with the formal invitation, and, as well as being distinguished physicians, they were some of the pleasantest men one could desire to meet.

Not content with settling for next year, we are already looking forward to meeting our friends in 1898. An invitation has been received from Edinburgh to hold the annual meeting for that year there. Although this cannot be officially settled until the Montreal meeting begins to sit, we may look upon it as an accomplished fixture. My regret at the termination of this pleasant week is therefore mitigated by the thought that many of the friends made will be met on the other side in August of next year, and in 1898 in the "modern Athens."

PARIS LETTER.

By Arthur R. Turner, M.D. (Paris).

During the long vacation of the summer months the Faculty of Medicine of Paris and the hospitals of the city are almost deserted. Not only are no lectures delivered at the school, but the principal men are usually away and their places in the hospitals taken by some of the younger ones, who at times are obliged to undertake the duties of two services simultaneously. It has not yet become the custom in Paris, as it is in Germany, to deliver short vacation courses of lectures and demonstrations during the summer months for the benefit of graduates and visitors. Some of the French medical papers, however, have called attention to the advantages of such courses. One objection is that Paris is usually exceedingly hot and close during the summer, and that the distance between the various hospitals would almost necessarily prevent a number of courses being delivered at short intervals during the day, a

condition of success which could not well be dispensed with.

Within a month three deaths have occurred among the prominent men of the medical profession in Paris. The first was that of Dr. Pajot, Emeritus Professor of Obstetrics of the Faculty of Medicine. The other two were those of Dr. Nicaise, surgeon of the hospitals, who within the last few years has edited some of the works of the most distinguished French surgeons of the Middle Ages, such as Guy de Chauliac; and Dr. Després. The latter, though a man of intelligence and a skillful operator, was above all known as a bitter enemy of antisepsis. He would never allow any of the antiseptic or aseptic methods to be used in his wards, and remained faithful to the methods of thirty years ago. This had given him the name of being the surgeon of the "*pansement sale*," or "dirty dressing." Another singularity was that he was always on bad terms with the lay nurses, who during the past few years have replaced the Sisters of Charity who were formerly charged with the service of the French hospitals. His quarrels with them had caused him to be reprimanded for rudeness by the Council of the Assistance Publique.

It may be said that the question of the foreign students in France, which has given rise to so much agitation, has been definitely settled. The Minister of Public Instruction has sent a circular to the officials at the head of the various universities, in which he notifies them that the following rules will be adopted: Foreign medical men and students not possessing the French Baccalaureate, and not having passed the scientific studies of the first year, will be allowed to enter the French medical schools, but the diploma conferred will not allow its possessor to practice in France. All students wishing to practice in France must pass the French Baccalaureate and the first year of scientific studies before being allowed to take their first inscription. An exception is made only in favor of students coming from certain countries with which agreements have been made to recognize the latter's examinations.

The result of this decision is that by far the greater part—in fact almost all—the foreign students coming to Paris will obtain a diploma which will not give them the right to practice in France.

At a recent session of the Société Médicale des Hôpitaux a number of cases were reported where the method of making a rapid diagnosis of enteric fever by means of the blood-serum of the patient had been successful. Dr. Widal at the same meeting gave an account of the method which he now employs, and which is both easier and more rapid than the one first described. He first takes ten drops of a culture of the bacilli of Eberth, one or two days old, grown in carefully neutralized bouillon, and adds a drop of serum obtained from blood drawn from the finger-tip by means of a slight prick. A drop of the mixture is placed on a slide, covered with a cover-slip, and examined at once under the microscope, comparison being made with a drop of the culture not treated by serum. If numerous and confluent masses are to be seen, the diagnosis of enteric fever is made; otherwise the preparation is examined half an hour later, and if even then the results be negative the preparation should be examined some hours later. In case it should be desired to carry on the examination still further, the method should be the one used at first.

In 1895 Dr. Frémont, a physician practicing at Vichy during the summer and at Nice during the winter, presented to the Academy of Medicine some specimens of pure gastric juice obtained from dogs whose stomachs had been separated by operation from the remainder of the intestinal canal. This operation did not seem to have any very serious result, for after a year has elapsed Dr. Frémont reports the animals fat and in good health, and in no wise to be distinguished at first view from any other well fed dogs.

This spring Dr. Frémont presented to the Academy of Medicine a report on a number of cases of enteritis, cholera nostras, influenza with gastro-intestinal complications, and various forms of dyspepsia, treated with such gastric juice. The dose varies from 150 to 500 grammes a day, and may be given in milk, in water, or in beer.

Dr. Frémont concludes that the pure gastric juice relieves at once the gastric disturbances of hypochlorhydric patients, and enables apeptic patients, who seemed almost lost, to digest and to increase in weight.

In his report on this subject Dr. Frémont quotes a number of cases where his method has been successfully used by various other physicians.

Two medical congresses have just been held in France. The first was the Seventh Congress of Alienists and Neurologists, the second the Third Congress of Internal Medicine. Both met at Nancy.